00081020

NOT TO BE ISSUED
OUT OF THE LIBRARY.

BOMBAY BRANCH
OF THE
ROYAL ASIATIC SOCIETY
TOWN HALL, BOMBAY.

NATIONAL ARCHIVES OF INDIA

Digitized with financial assistance from

NSDL
Technology, Trust & Reach

on 16 November, 2018

NATIONAL ARCHIVES OF INDIA

NATIONAL ARCHIVES OF INDIA

THE

INTERNATIONAL EXHIBITION OF

A CLASSIFIED

AND

DESCRIPTIVE CATALOGUE

OF THE

INDIAN DEPARTMENT.

81020 cc

BY J. FORBES WATSON, A.M., M.D.

F.L.S., F.C.S., F.R.A.S., &c.

Reporter on the Products of India; Superintendent of the Indian Department, International Exhibition

---

ORIGINALLY PRINTED FOR HER MAJESTY'S COMMISSIONERS:
REPRINTED BY ORDER OF THE SECRETARY OF STATE FOR INDIA IN COUNCIL,
FOR PRESENTATION TO EXHIBITORS ETC. IN INDIA.

S-6-19

LONDON:
PRINTED BY
SPOTTISWOODE & CO., NEW-STREET SQUARE, E.C.
PRINTERS TO H.M.'S COMMISSIONERS FOR THE INTERNATIONAL EXHIBITION.
1862.

NATIONAL ARCHIVES OF INDIA

R
016.6064
wat/cla
81020

00081020

NATIONAL ARCHIVES OF INDIA

PREFACE.

Her Majesty's Commissioners the Catalogue of the
ment, my object has been to supply not only a
e articles actually exhibited, but at the same time
information as possible within the space at my

es established in India for the purpose of collecting
of the districts represented by them, as well as
tors, the public are indebted for much information
anent record here, as well as in MR. DOWLEANS'
f the articles forwarded through the CENTRAL

statistical tables, which add so materially to the
on, I am indebted to the Statistical Department

few remarks on the quality of the various
e department over which I have the honour
necessarily been reserved for my final report
ment. It may, however, be fairly assumed
oint of view, the value to India and to this
Exhibition will be considerable, and that the
cruing therefrom will far exceed those which
Indian articles on the two previous occasions

JOHN FORBES WATSON.

NATIONAL ARCHIVES OF INDIA

NATIONAL ARCHIVES OF INDIA

INDIAN COMMITTEES.

CENTRAL COMMITTEE FOR BENGAL.

CALCUTTA.

PRESIDENT.

The Honorable Sir Bartle Frere, K.C.B., *Member of the Supreme Council of India.*

MEMBERS.

Honorable Sir Mordaunt Wells, Kt., *Puisne Judge of the Supreme Court of Judicature*

Honorable H. B. Harington, *Member of the Legislative Council of India*

Honorable W. FitzWilliam, Esq., *Member of the Legislative Council of India*

Honorable D. Cowie, Esq., *Member of the Legislative Council of India and Sheriff of Calcutta*

A. Grote, Esq., *President of the Income Tax Commission, and Member of the Board of Revenue*

R. Temple, Esq., *Currency Commissioner for India*

W. S. Seton-Karr, Esq.

Col. C. B. Young, *Secretary to the Government of Bengal, Department Public Works*

Professor T. Oldham, *Superintendent of the Geological Survey of India*

Dr. T. Anderson, *Superintendent of the Botanical Gardens*

Dr. F. N. Macnamara, *Chemical Examiner and Professor of Chemistry at the Calcutta Medical College*

W. S. Atkinson, Esq., *Director of Public Instruction*

Col. Baird Smith, C.B., *late Mint Master of Calcutta*

G. Brown, Esq., *of the firm of Messrs. Jardine, Skinner & Co.*

Seth Apcar, Esq., *of the firm of Messrs. Apcar & Co.*

F. Jennings, Esq., *Master of the Trades' Association*

Rajah Kali Krishna Bahadoor

Manockjee Rustomjee, Esq.

Syud Keramut Ali.

SECRETARY.

A. M. Dowleans, Esq.

NATIONAL ARCHIVES OF INDIA

CENTRAL COMMITTEE FOR THE PUNJAB.

LAHORE.

PRESIDENT.

D. F. McLeod, Esq., C.B., *Financial Commissioner of the Punjab*.

MEMBERS.

T. D. Forsyth, Esq., C.B., *Commissioner of the Lahore Division*

Dr. Burton Brown, *Chemical Examiner and Professor of Chemistry in the Lahore Medical College*

SECRETARY.

T. H. Thornton, Esq., C.S.

DISTRICT COMMITTEES.

UMRITSUR.

Major Farrington
H. Cope, Esq.
T. C. Vaughan, Esq.
D. FitzPatrick, Esq., *Secretary*

LOODIANA.

Captain McNeile

PESHAWUR.

Captain Coxe
Lieut. Shortt, *Secretary*

DELHI.

Fred. Cooper, Esq., C.B.
Dr. B. Smith, *Secretary*

MOOLTAN.

Lieut.-Colonel Hamilton
Colonel Voyle
Lieut. Lane, *Secretary*

KANGRA.

P. Egerton, Esq.
Sir A. Lawrence, *Secretary*

NATIONAL ARCHIVES OF INDIA

CENTRAL COMMITTEE FOR THE N.W. PROVINCES.

ALLAHABAD.

PRESIDENT.

Rowland Money, Esq.

MEMBERS.

C. B. Thornhill, Esq.
Dr. Beatson
Captain Hodgson
Captain Peile
G. Sibley, Esq.
Cecil Stephenson, Esq.
D. W. Lorne Campbell, Esq.
J. Middleton, Esq.
Nazir Ali Khan, Esq.
Buldeo Narain *alias* Chotee Loll

SECRETARY.

G. H. M. Batten, Esq.

SUB-COMMITTEES.

ALLAHABAD.

W. Johnstone, Esq.
W. Young, Esq.

BANDA.

H. W. Dashwood, Esq.
C. W. Carpenter, Esq.
Ahmed Hossein
Oodey Ram Seth

CAWNPORE.

C. A. Elliott, Esq.
E. S. Robertson, Esq.
— Maxwell, Esq.
— Palmer, Esq.
Lalla Sheopershaud

FUTTEHPORE.

J. Power, Esq.
W. Tyrrell, Esq.
Ahmed Buksh
Lall Bahadoor

NATIONAL ARCHIVES OF INDIA

SUB-COMMITTEES—*continued.*

ROHILCUND DIVISION.

President.

W. Roberts, Esq.

Members.

J. Inglis, Esq.
Dr. Corbyn
Dr. Cunningham
Captain Unwin
Rajah Byjnath
Moulvie Khyrooddeen Ahmed Bahadoor
Baboo Gunga Pershad
Rajah Khyratee Lall
Lalla Luchmee Narain
Moonshee Buldeo Singh
Nawab Neamut Khan

Secretary.

H. R. Wilson, Esq.

AGRA DIVISION.

President.

G. F. Harvey, Esq.

Members.

A. L. M. Phillipps, Esq.
John Murray, Esq., M.D.
G. R. Playfair, Esq., M.D.
Captain L. Macbel
Lieut. J. L. Watts
J. T. Pritchard, Esq.
W. Birks, Esq.
Lalla Motee Lall
Moulvie Syud Ameer Alli Shah
Hukeem Syud Nusseerooddeen
Lalla Jyaram Dass
Chowbey Muttrapershad

JUPPULPORE DIVISION.

President.

Major W. C. Erskine

Members.

Captain W. Nembhard
Captain A. Impey
Captain Pearson
J. W. Williams, Esq.
F. Macbell, Esq.
Kooshall Chund Seth
Innarjun Pundit

Secretary.

A. M. Russell, Esq.

BENARES DIVISION.

President.

F. B. Gubbins, Esq., C.B.

Members.

W. Edwards, Esq.
J. H. Bax, Esq.
Rajah Deonarain Singh
Baboo Gooroodas Mitter
Baboo Narain Dass
Baboo Shevapershad
Baboo Dabeepershad

MEERUT DIVISION.

President.

Colonel Huyshe

Members.

Colonel Hogge, C.B.
Major Ross, H.M. 36th Regiment
Captain Brown, H.M. 35th Regiment
G. D. Turnbull, Esq., C.S.
H. C. Cutcliffe, Esq., F.R.C.S.
E. E. Watson, Esq., C.S.
Koour Ouzeer Alli Khan
Mahomed Alli Khan
Oomer Alli Khan
Lalla Bankey Raie

NATIONAL ARCHIVES OF INDIA

SUB-COMMITTEES—*continued.*

JHANSIE DIVISION.

President.

Major Ternan

Members.

C. Daniell, Esq.
Captain Davidson
Captain Baillie
Doctor Annesley
Rajah of Kutera

Secretary.

W. R. N. James, Esq.

MIRZAPORE DISTRICT.

H. P. Fane, Esq.
C. B. Denison, Esq.

MIRZAPORE DISTRICT—*continued.*

J. H. Loch, Esq., M.D.
C. McLean, Esq.
Mulanut Jyramgeer
Ukbur Alee Khan

GORUCKPORE DISTRICT.

President.

A. Swinton, Esq.

Members.

F. M. Bird, Esq.
G. Osborne, Esq.
M. Cooke, Esq.
Chedeeloll Muhajun
Ramsuroop Muhajun
Meer Zuhoor Alee

CENTRAL COMMITTEE FOR OUDE.

LUCKNOW.

PRESIDENT.

G. Campbell, Esq.

MEMBERS.

Colonel Abbott
Major Evans
Major Crommelin, C.B.
Captain Chapman

SECRETARY.

Dr. Bonavia

NATIONAL ARCHIVES OF INDIA

LOCAL COMMITTEES IN BENGAL AND ITS DEPENDENCIES.

RANGOON.

President.

Major F. P. Sparks

Members.

Captain Browne
R. S. Edwards, Esq.
R. S. Steel, Esq.
Thomas Christien, Esq.
G. Bullock, Esq.
E. Fowle, Esq.

CUTTACK.

President.

A. Shore, Esq.

Members.

Colonel Maclean
T. De B. Armstrong, Esq.
W. L. Heeley, Esq.
R. Pringle, Esq., M.D.
Baboo Juggomohun Rai
Baboo Luckheenarain Rai Chowdry

Secretary.

W. C. Lacy, Esq.

TIPPERAH.

M. Lecolier, Esq.
H. G. Leicester, Esq.
Baboo Hurkally Ghose
Baboo Hurrish Chunder Bose

AKYAB.

President.

Major G. Verner

Members.

J. Bullock, Esq.
A. L. McMillan, Esq.
Mahomed Bux
T. Shepherd, Esq.
Captain Ripley
H. W. Beddy, Esq.
Captain Twynam
J. H. O'Donel, Esq.
Phat-May

Secretary.

Dr. Graham

CHITTAGONG.

President.

V. H. Schalch, Esq.

Members.

J. D. Ward, Esq.
J. E. Bruce, Esq.
— Hollingsworth, Esq.
Dr. W. B. Beatson
Captain Magrath
W. J. Brown, Esq.
Baboo Obhoy Chunder Doss
Baboo Ramkinoo Dutt
Baboo Brijo Mohun Roy
Baboo Hur Chunder Roy
Baboo Thacoorbux Tewaree

NATIONAL ARCHIVES OF INDIA

LOCAL COMMITTEES IN BENGAL AND ITS DEPENDENCIES—*continued.*

BULLOOAH.

Dr. H. M. Davis
Baboo Ramgopal Roy
Baboo Gungapersaud Sein
Baboo Gungadass Sein

BACKERGUNGE.

— Harvey, Esq.

SYLHET.

— Davies, Esq.

MYMENSING.

R. Abererombie, Esq.

FURREEDPORE.

— Tottenham, Esq.

CACHAR.

Lieut. Stewart

ARRAH, IN SHAHABAD.

C. P. Leycester, Esq.
R. F. Hutchinson, Esq.
S. Bayley, Esq.

GYA, IN BEHAR.

T. C. Trotter, Esq.
E. F. Lautour, Esq.
James Farrell, Esq.
J. B. Allan, Esq.

CHUPRAH, IN SARUN.

H. Nelson, Esq.
J. Jackson, Esq.

DACCA.

President.

C. T. Davidson, Esq.

Members.

— Dodgson, Esq.
— Wise, Esq.
Dr. Simson
J. G. Pogose, Esq.
Khajeh Abdool Gunny
— Reynolds, Esq.
— Davy, Esq.
— Brennand, Esq.
Baboo Gobind Chunder Dutt

PATNA.

President.

H. D. H. Fergusson, Esq.

Members.

H. Wake, Esq.
J. Sutherland, Esq.
J. K. Walter, Esq.
C. J. Muller, Esq.
R. F. Chisholm, Esq.
Syed Lootf Ally Khan
Baboo Hurry Kishen

MOOTEEHAREE, IN CHUMPARUN.

W. Macpherson, Esq.
J. M. Coates, Esq.

NATIONAL ARCHIVES OF INDIA

LOCAL COMMITTEES IN BENGAL AND ITS DEPENDENCIES—*continued.*

MOZUFFERPORE, IN TIRHOOT.

A. E. Russell, Esq.
T. B. Lane, Esq.
N. C. Macnamara, Esq.
J. Forlong, Esq.
Rai Nundeeput Mabta Bahadoor

CHOTA NAGPORE.

President.

Captain E. T. Dalton

Members.

Major W. H. Oakes
Captain J. S. Davies
Captain G. C. Depree
Captain A. P. S. Moncrieff
Bura Lall Oopendurnath Sahee Deo
Thukoorai Kishendeal Singh Rae Bahadoor
Thukeorai Rughooburdeal Singh Rae Bahadoor
Lieut.-Col. T. Simpson
M. de W. George, Esq.
W. F. Clark, Esq.
C. G. Wray, Esq.
Baboo Kallie Dass Paulit
Koomar Ramnath Sing
M. Liebert, Esq.
Captain G. N. Oakes
Dr. W. J. Ellis
R. C. P. Perry, Esq.
Baboo Nundookoomar Aikat
Baboo Umbikachurn Mookerjee
Captain R. C. Birch
Dr. A. J. Meyer
Rajah Chunderhur Sing Deo Bahadoor
Rajah Chillresser Dhul
Rajah Bindhessuree Pershad Sing Deo Bahadoor
Rajah Protap Narain Sing Bahadoor

Secretary.

Lieut. R. C. Money

BHAUGULPORE.

Vice-President.

C. B. Skinner, Esq., *Officiating Commissioner*

Members.

W. R. Davies, Esq.
Baboo Dwarkanauth Chatterjee
Captain Layard

MONGHYR.

President.

W. H. Henderson, Esq.

Members.

T. Duka, Esq., M.D.
J. Bean, Esq.

PURNEAH.

President.

W. L. T. Robinson, Esq.

Members.

F. J. Earle, Esq.
W. M. Beaufort, Esq.
Baboo Kalyprosonno Roy Chowdry
T. J. Shillingford, Esq.

BURDWAN.

President.

G. Plowden, Esq., *Commissioner*

Members.

The Maharajah of Burdwan
Pierce Taylor, Esq.
Captain Short
S. S. Hogg, Esq.
Baboo Sharoda Pershad Roy

Secretary.

J. Tweedie, Esq.

NATIONAL ARCHIVES OF INDIA

LOCAL COMMITTEES IN BENGAL AND ITS DEPENDENCIES—*continued.*

RAJSHAHYE.

President.

H. M. Reid, Esq.

Members.

L. S. Jackson, Esq.
S. Taylor, Esq.
Dr. Shircore
James Cockburn, Esq.
C. R. Jennings, Esq.
D. T. Gordon, Esq.
Rajah Prosunno Nath Roy
Koour Anund Nath Roy
Baboo Mothooranath Bannerjee

GOWHATTY, IN ASSAM.

Members.

H. Bainbridge, Esq.
Colonel D. Reid
J. N. Martin, Esq.
W. Becher, Esq.
Colonel H. Vetch
Captain R. Campbell
Dr. De Fabeck

Secretary.

Captain Lloyd

DARJEELING.

Dr. A. Campbell

BOGRAH.

— Larkins, Esq.

GOWALPARRAH.

Lieutenant Morton

NOWGONG.

Lieutenant Sconce

DURRUNG.

Lieutenant W. Phaire

SEEBSAGUR.

W. O. A. Beckett, Esq.

LUCKIMPORE.

Captain H. S. Bivar

BERHAMPORE.

Members.

A. Pigou, Esq.
A. W. Russell, Esq., *Judge*
H. A. Cockerell, Esq., *Collector*
J. Guise, Esq., *Civil Surgeon*
Sir W. Wemys, Bart.
Rajah Prosononarain Deb Bahadoor
Baboo Rajkisto Sein
Baboo Poolin Beharee Sein
Baboo Punchanun Banerjee

Secretary.

Major H. C. James

NATIONAL ARCHIVES OF INDIA

CENTRAL COMMITTEE FOR MADRAS.

PRESIDENT.

The Honorable E. Maltby, Esq., *Member of Council*

MEMBERS.

W. R. Arbuthnot, Esq. *(Messrs. Arbuthnot & Co.)*

Surgeon Major Edward Green Balfour, *Examiner of Accounts, Medical Department*

W. H. Crake, Esq. *(Messrs. Parry & Co.)*

Surgeon Alexander Hunter, M.D., *Superintendent of the School of Industrial Arts*

Captain A. H. Hope, *Superintendent of Army Clothing*

SECRETARIES.

C. Collett, Esq., *Acting Collector of Sea Customs*

C. J. Shubrick, Esq., *Collector of Sea Customs*

CENTRAL COMMITTEE FOR MYSORE,

APPOINTED BY

C. B. SAUNDERS, ESQ.

Officiating Commissioner for the Government of the Territories of His Highness the Maharajah of Mysore.

PRESIDENT.

Major R. S. Dobbs, *Officiating Judicial Commissioner*

MEMBERS.

Colonel Lawford, *Chief Engineer of Mysore*

Major Sankey, *Assistant to Chief Engineer of Mysore*

Captain J. Pearse, *Secretary to the Mysore Commission*

J. Kirkpatrick, Esq., *Surgeon to the Mysore Commission*

Captain Puckle, *Assistant to Superintendent of Bangalore Division*

J. Garrett, Esq., *Director of Public Instruction, Mysore*

B. Kristniengar, *Sheristadar of Judicial Commissioner's Office*

S. B. Krishnasawmy Iyengar, *Naib Sheristadar of Chief Commissioner's Office*

SECRETARY.

Lieutenant R. A. Cole, *Assistant to Judicial Commissioner*

NATIONAL ARCHIVES OF INDIA

CENTRAL COMMITTEE FOR BOMBAY.

PRESIDENT.

The Honorable Sir Joseph Arnould, Knight.

MEMBERS.

Lieut.-Col. H. Barr
Bhawoo Dajee, Esq.
G. Birdwood, Esq. M.D.
W. R. Cassels, Esq.
Cowasjee Jehangeerjee, Esq.
J. N. Fleming, Esq.
A. K. Forbes, Esq., *Civil Service*
Sir Alexander Grant, Bart.
Sir Jamsetjee Jejeebhoy, Bart.
Juggonath Sunkersett, Esq.
Mungaldass Nathoobhoy, Esq.
H. Newton, Esq., *Civil Service*
John Peet, Esq., M.D.
Lieut.-Col. John Pottinger, C.B.
Lieut.-Col. H. Rivers
Colonel Commandant H. B. Turner
Commodore G. G. Wellesley, C.B., R.N.
M. R. Westropp, Esq.
Rev. John Wilson, M.D.

SECRETARY.

Dr. G. Birdwood.

COMMITTEE FOR SINGAPORE.

PRESIDENT.

The Honorable Colonel Cavanagh.

MEMBERS.

The Honorable Lieut.-Col. Macpherson
Colonel Collyer
J. Moniot, Esq., *Surveyor-General*
H. H. Inche Wan Aboo Bakar
W. H. Read, Esq.
Jose D'Almeida, Esq.
Tan Kim Sing
G. Angus, Esq.

HON. SEC.

Colonel Collyer, *Chief Engineer, Straits Settlements.*

NATIONAL ARCHIVES OF INDIA

The maps exhibited will be found extremely useful guides to the topography of India. Several of them are on a large scale, and give indications of the rapid progress which is making in the opening up of the various districts.

3. [3298] The Atlas of a Topographical Survey of the Himalaya Mountains, under COLONEL SIR A. S. WAUGH, lithographed in colours at the Surveyor General's office, Calcutta, by Mr. H. M. SMITH, Superintendent, Lithographic Branch. Exhibited by LIEUT.-COLONEL H. L. THUILLIER, Surveyor General of India.

This atlas is not only intended as a specimen of the Topographical Survey of a portion of the Himalaya Mountains ranging from 22,832 feet above mean sea level, but also to exhibit a new style of representing such difficult hilly ground and intricate details by a combination of chalk and ordinary transfer, drawing, and printing in colours from separate stones, as first introduced by the exhibitor in the publication of the results of the Indian Survey, at the Surveyor General's Office, Calcutta, whereby the details on the $\frac{1}{4}$ inch geographical scale may be more easily read than by line engraving.

Maps of the Geological Survey of India. Exhibited by THOMAS OLDHAM, Esq., Superintendent of the Geological Survey of India.

The Geological Survey of India was first established on a systematic basis in 1856. Previously to that year several detached districts had been examined and reported on, but these being isolated and unconnected, no general results of any value could be looked for. In 1856 a systematic and continuous examination of the entire country was commenced on a plan suggested by the present Superintendent of the Survey, and this plan has been steadily maintained since.

Very large portions of the Indian territories have not as yet been topographically surveyed, and of these no trustworthy maps exist. The Geological Survey is, therefore, compelled to confine its examination, for the present, to such districts as have been mapped. In some cases where maps did not exist, topographical sketch surveys have been made by the Geological Survey as the examination of the country progressed.

Wherever maps on a large scale could be procured, they have invariably been used as the records of the Geological Survey, but for many districts the only maps available are on the small scale of four miles to the inch or $\frac{1}{253440}$. This is the scale of the Indian Atlas Sheets, the only permanent or engraved maps issued by the Government of India, all others being only lithographed, and a limited number of copies printed.

The following statement gives a brief outline of the progress already made in the examination of the country:—

MADRAS.

4. [6619] Geological Map of the Trichinopoly District.

5. [6620] Do. of the adjoining country.

The examination of the Madras Presidency was commenced in 1857. The Nilghiri Hills have been mapped and reported on (Memoirs of Geological Survey of India, vol. i.), and the districts of Trichinopoly, Salem, and South Arcot, with parts of adjoining districts (Tanjore, &c.), have been nearly completed. These contain the cretaceous rocks, from which an immense collection of fossils has been made, and partly described.—Palæontologia Indica, vol. i.

The maps sent show the structure of the Trichinopoly district, marked A (scale $\frac{1}{2}$ inch to the mile); and the sheet 79 of the Indian Atlas, marked B, shows that and the adjoining country; scale $\frac{1}{4}$ inch to the mile.

In the Madras Presidency an area of more than 18,500 square miles has been completed.

CENTRAL INDIA.

6. [6621] Geological Map of a part of the Nerbudda Valley.

7. [6622] Do. of Bundelkund.

The geological map of part of the Nerbudda Valley, marked C, represents about 8,200 square miles; that of Bundelkund about 5,000 square miles. In addition to the geological mapping of the Nerbudda Valley, the greater portion of the district was also topographically surveyed. The examination of the country adjoining this on the east, and along the valley of the Soane River, had completed (up to 1861) about 5,000 square miles in addition to that now published.

BENGAL AND THE NORTH-WESTERN PROVINCES.

In Bengal, the following districts have been completed, and in every case (where the maps were available) on the scale of 1 inch to the mile: of these only a few are sent as specimens, as the size of the maps, if combined, would be far greater than space could be obtained for.

AREA IN SQUARE MILES.	DISTRICTS.
2,698	Pooree, } Orissa
3,062	Cuttack, } Orissa
1,876	Balasore, } Orissa
600	Talchéer Coal Field, Orissa
5,032	Midnapore, Hidgellee
1,349	Bancoorah
2,692	Burdwan
2,007	Hooghly
3,114	Beerbhoom
2,634	Moorshedabad
7,804	Bhaugulpore
3,035	Rajshahye
1,288	Maldah
5,878	Purneah
3,599	Monghyr
1,829	Patna
48,495	

In addition to the above, large portions of Dinagepore, Tirhoot, Behar, Shahabad, Mirzapore, Benares, Goruckpore, &c. (in all about 15,000 square miles) have been examined, although the entire districts are not yet completed.

In *Eastern Bengal* the Khasia Hills and parts of adjoining districts have also been examined.

In the *North-West of India* the country extending from Hurdwar on the Ganges to the Beeas along the Sewalik and Sub-Himalaya ranges has been mapped, embracing an area of about 6,000 square miles.

In *Pegu*, the examination of which was commenced in 1860-61, 3,000 square miles have been completed, while portions of the Burmese Empire and of the Tenasserim Provinces had also been reported on.

In addition to the foregoing, preliminary examinations of large areas have been completed (Guzerat &c.)

NATIONAL ARCHIVES OF INDIA

A total area, therefore, of more than 94,000 square miles has been completed and geologically mapped; *an area much larger than the whole of Great Britain.*

8. [6623] Maps of the Raneegunge Coal Field.

9. [6624] Atlas Sheets.

10. [6617] Geological Map of Bancoorah.

11. [6616] Do. Burdwan.

12. [6615] Do. Beerbhoom.

13. [6618] Geological Map of Monghyr.

The maps of the Raneegunge Coal Field on the larger scale of 1 inch to the mile, marked E, and the Atlas Sheets Nos. 112, 113, 114F, which embrace a large portion of the country which has been examined in Bengal, will show the amount of detail and care which has been applied; while the full maps of a few of the districts' are sent to show the character of the original field work. (Bancoorah G, Burdwan H, Beerbhoom I, Monghyr J).

Owing to the peculiar mode of publication of these topographical maps, no general or combined map of the whole area can be exhibited on the larger scale.*

III.—ORES AND METALLURGICAL OPERATIONS.

Ores of the more common metals, as of iron, copper, zinc, tin, lead: —

IRON ORES.

The iron ores of India are of great interest and value. Many are noted for their singular purity, especially those belonging to the magnetic iron-ores. Some are distinctly titaniferous, being in this respect similar to the Taranaki iron-sand from New Zealand, which has lately attracted so much attention in this country.

Series illustrating the Iron-manufacture, exhibited by the East India Iron Company, through E. J. BURGESS, Esq., *Secretary.*

16. [9845] Laterite stone, of which the shell of the blast furnaces are built, and all other permanent buildings at Beypore.

17. [9847] Shells used as a flux in the Beypore blast furnace instead of lime.

18. [9848] Lime used at Trincomallee blast furnace.

WOODS USED FOR MAKING CHARCOAL.

19. [9849] Vella Murdah.

20. [9850] Kurrah Murdah.

21. [9851] Errool.

22. [9852] Indian Gooseberry.

23. [9853] Poohum.

24. [9854] Nux vomica.

25. [9855] Cassan.

SAMPLES OF CHARCOAL EMPLOYED.

ORES.

26. [9857] Magnetic iron ore from Nynamullay, Salem.

27. [9858] Do. Tullamullay, Salem.

28. [9859] Do. Shadamunglam, Salem.

29. [9860] Do. Moorakcully, Salem.

30. [9861] Do. Rajakcullay, Salem.

31. [9862] Hydrous peroxide of iron, Arreanattum, South Arcot.

32. [9863] Magnetic iron ore, Palamcotta, South Arcot.

33. [9864] Do. Penatoor, South Arcot.

33A. [4892] Do. Madras. DR. SHORTT.

34. [9865] Do. Tondamum, Poodoocola District.

35. [9866] Do. Poonpara, Beypore.

36. [9867] Do. Honore, Beypore.

37. [9868] Do. Edewannah, Beypore.

The bulk of these ores are rich magnetic oxides, and when freed from earthy matter, and ready for the blast furnace, contain about 72 per cent. of iron. They are found in mountain masses, and are obtained by quarrying with a crowbar. The quantity is so large, that it is not necessary to have recourse to underground operations. They are quite free from sulphur, arsenic, and phosphorus, and upon a large average have been found to yield 68 per cent. of metal in the blast furnace.

The Poonpara and Honore ores are those chiefly used at present for the production of steel by the Bessemer process.

* Note by PROFESSOR OLDHAM.

NATIONAL ARCHIVES OF INDIA

38. [9856] Two pieces of bamboo used for supports and rafters in sheds, floating rafts for timber, &c.

39. [9846] Clay found at Beypore 20 to 30 feet below the surface, used for fire-bricks and for lining furnaces.

40. [9874] Specimen of native steel.

41. [9875] Two samples of steel made direct from the ore in Malabar native furnace.

42. [9873] Three samples of hammered bar iron, manufactured by native process.

43. [9870] Pair of goat-skin bellows for blowing smiths' fires.

44. [9871] Cast iron mamooty.

45. [9869] Nine specimens of East Indian charcoal pig iron.

46. [9876] Samples of Indian Bessemer steel, made at Beypore, direct from blast furnace.

47. [9877] Three jungle knives, manufactured by native smiths at Beypore Works, from Indian Bessemer steel, which had been made direct from blast furnace.

48. [9878] Three sickles, do.

49. [9879] Four felling axes, do.

50. [9880] Razor, do.

51. [9881] Two penknives, do.

52. [9882] Six pocket knives, manufactured from Indian Bessemer steel, which had been made direct from blast furnace, by ANTHONY ROTHERHAM, *Sheffield.*

53. [9883] Four desk knives, do.

54. [9884] One pruning knife, do.

The plan adopted for the production of Indian cast-steel at the Beypore Works, by the Bessemer process, is similar to that pursued in Sweden, but differs essentially from the Sheffield method.

At Sheffield and elsewhere in this country, where the process is in operation, pig-iron is melted in a reverberatory furnace, and run thence into the converter or Bessemer vessel, which is mounted on axes; but in Sweden, and at the Beypore Works in Madras, the crude metal is *run* direct from the blast-furnace into an ordinary founder's ladle, which is raised to a sufficient height by means of a travelling crane, and then poured into the converter, which is a *fixed* vessel, lined with a mixture of native fire-clay and sand, and pulverized English firebrick. Steam is raised to about 50lbs. in the boilers, giving a pressure of blast of about 6½ or 7lbs. per square inch, and the air is driven into the converter through 11 tuyeres of ¾-inch diameter, placed horizontally at the bottom of the vessel. No manganese or other metal is added to temper the steel, the quality of the metal required being regulated by the pressure of blast and the time of blowing.

As soon as the metal is sufficiently decarbonised, the vessel is tapped, and the fluid steel run into a ladle provided with an outlet in the bottom. This ladle is swung round over the cast-iron ingot moulds, the fireclay-plug withdrawn, and the steel allowed to flow in a clear stream into the moulds beneath.

These ingots are then cogged down, under a Nasmyth hammer, and drawn into finished steel bars of various sizes.

The native tools exhibited were made from steel produced at some of the early experiments, and drawn down under considerable disadvantages; but with the appliances that will soon be at command, improved steam tilt-hammers by Messrs. Kitson & Hewitson, and Messrs. Hudswell & Clarke of Leeds, having been despatched to Madras, it is expected that nicely-finished bars of Indian cast-steel, of excellent quality, will soon be supplied from the Beypore Works.

55. [9885] Samples of Bessemer steel, made from East Indian charcoal pig iron, various sizes, tilted and rolled.

56. [9885] Two pieces of ingots, broken to show fracture, made by Bessemer process from Indian charcoal pig iron, at the works of Messrs. JOHN BROWN & Co., Atlas Steel and Iron Works, *Sheffield.*

57. [9886] Three steel sheets, do.

58. [9887] Small steel circular saw, do.

59. [9888] Piece of steel bridge rail, do.

60. [9889] Piece of bright shafting, do.

61. [9890] A pocket knife, made from Indian steel by ANTHONY ROTHERHAM, *Sheffield.*

62. [9891] Four table knives, do.

63. [9892] Two bread knives, do.

64. [9893] Two carvers, do.

65. [9872] Small and large native lamp, used in pagodas, &c.

66. [9894] Three razors, and case of razors, made from Indian iron and steel.

67. [9896] Two gun barrels and gun lock, do.

68. [9894] Sword blade, do.

69. [9898] Two pieces of bright shafting, do.

70. [9897] Small spring, do.

71. [9899] Walking stick, do.

72. [9895] Carving knife and fork, and bread and table knives, do.

73. [9900] Nails (various) and screws, do.

74. [9898] Small spindle, do.

75. [9901] Five bundles of wire, do.

76. [9902] Two small malleable castings, do.

NATIONAL ARCHIVES OF INDIA

77. [5975] Magnetite in lustrous flakes, Salem.

78. [5978] Do. massive and singularly pure, Salem.

79. [5979] Do. rusting on the surface, Salem.

80. [5976] Do. in octohedral crystals, Salem.

81. [5977] Do. rusting on the surface, first sort from Salem.

82. [5974] Do. rusted on the surface, second sort from Salem.

The iron ore of the Salem districts of the Madras Presidency is a rich magnetic oxide of iron, very heavy and massive. It is commonly known as loadstone. The yield averages 60 per cent. of metallic iron. Much of the ore being a pure black magnetic oxide, would doubtless yield 73 per cent. The ore is, however, often mixed with quartz, which is a very refractory material in the blast furnace. Limestone, and in some places, shell lime, is employed as a flux; and the charcoal of some kind of acacia is the fuel.

83. [7222] Iron ore. Very fine and massive hæmatite. DR. HUNTER.

83A. [9787] Do. Madras. E. W. BENNETT, Esq.

Iron Sands exhibited by CAPT. J. MITCHELL.

84. [5041] Magnetic iron sand, village of Pankam, Vellore Talook.

85. [5042] Do. village of Pulleputt, Vellore Talook.

86. [5043] Do. village of Anchenamput, Vellore Talook.

87. [5044] Do. village of Vannanthangal, Vellore Talook.

88. [5045] Do. village of Vennembutt, Vellore Talook.

89. [5046] Do. village of Catharercoopum, Vellore Talook.

90. [5047] Do. village of Vamembady, Vellore Talook.

91. [5048] Do. village of Nimmanapully, Santooroo, Congoondy Talook.

92. [5049] Iron ore, from Santghum, Talook.

93. [5050] Iron sand, from Talook of Streevellypootoor, in district of Tinnevelly.

---

94. [5304] Iron ore, Dhenkanal, Cuttack.

95. [5302] Iron ore of the class of hæmatites, both micaceous and siliceous, Dhenkanal.

96. [5303] Do. do. Talchere, Cuttack. GOVERNMENT.

An abundance of this ironstone is found in the district of Sumbulpore, and it is plentiful in the Cuttack Tributary States of Talchere, Dhenkanal, Pal-Lahara, and Ungool, and indeed throughout the hilly country bordering the settled districts of this province on the north-west. The whole of the iron used for various purposes in this division is supplied from these local sources. In Sumbulpore, according to Dr. Shortt, of the Madras Army, who passed through that district in 1855, the crude iron is sold at one anna per seer, which is equivalent to about three-fourths of a penny per English pound. From a report by the same observer, the following information relative to the method of smelting is gathered. No flux is used; the broken ironstone is mixed with charcoal, which can be prepared in any required quantity on the spot, and the mixture is then, probably in alternate layers, put into the furnace,—a kiln in miniature, standing about 4 feet high, and made of clay. The top is open, and the bottom and sides thoroughly closed. The fire is maintained by an artificial blast, introduced through a fire-clay pipe, which is sealed up with clay after the insertion of the nozzle of the bellows. The slag escapes, or more properly is raked out, through an aperture made in the ground, and which runs up into the centre of the furnace base. Three men —one to serve the fire, and two to work the bellows—are required to tend each furnace. Nearer home, this ore abounds, as has been observed, in Ungool, Talchere, Pal-Lahara, and Dhenkanal. The specimens sent are from Talchere and Dhenkanal. These are a red-ochry ore, said to produce very excellent metal, without the aid of a flux. The method of smelting here is very similar to that already described, the main difference being that the slag is passed out through an arched opening in the base of the furnace. The charcoal used is made from the Sal or *Shorea robusta*. Limestone in calcareous nodules is abundant on the spot, in Ungool at least, but is nowhere used in smelting. The price of the crude iron in Ungool is a trifle less than one anna per seer. It is, as might be expected, mixed with impurities. A specimen of the Ungool ore, taken from the ground where it had lain exposed to sun and rain, gave 66 per cent. of the peroxide of iron, equal to 46 per cent. of metallic iron. A sample from Pal-Lahara gave 60½ per cent. of the protoxide of iron, equivalent to 47 per cent. of metal. These results are given on the authority of Mr. Piddington, late Curator of Economic Geology, Calcutta. The native method of smelting is, however, rude and wasteful.*

Although there is abundance of mineral coal in South Mirzapore, in Palamow, Singrowlie, and Rewah, native smelters use only wood charcoal prepared by themselves, and as their furnaces and tools are small, they can all be constructed and arranged by one man in half a day; this fuel and ore are close at hand to the furnace, the latter being remade farther in the jungle to suit their main requirements, while the wretched hut in which they live may well be prepared in the half day remaining. The process employed by the smelters is a very simple one. To each furnace there are two men, and it is kept in full play all day. Each day, if the smelters have wives and children to break up the ore into ½ or ¼-inch cubes, and bring charcoal, they will charge the furnace four times, and the day's work will be 4 or 5 small malleable pigs of 2 or 2½ seers each, or in all 12 annas to a rupee's worth of iron. They employ no flux, and the slag runs off first in pipe-like lumps. The furnace is emptied at each charge. The metal never runs liquid from the furnace,

* Local Committee of *Cuttack*. W. C. LACEY, Esq., Secretary.

NATIONAL ARCHIVES OF INDIA

but falls to the bottom, below the blast tube, from whence it is taken in a flaming mass by a pair of iron tongs, and while incandescent it is hammered on a hard stone, or if the smelter be rather rich, on a rough iron anvil, into a double-wedge-shaped pig, and so on, the labour being divided between the smelter and his family, who think themselves fortunate if they can earn 1½ anna per head.

96A. [3519-21] Iron ore, Ulwar.

The fuel employed in this district, in smelting the ore, is charcoal obtained from the jungle covering the hills, near which the ore is found. That obtained from the Dhak Tree (*Butea frondosa*) is the best, and costs about 1 rupee for 6 maunds. To smelt 16 maunds of ore, 24 maunds of charcoal are required, and this will yield 4 maunds of iron, valued at 3 rupees per maund. The details are as follows: 16 maunds of ore, including carriage, 1 rupee 8 annas; 24 maunds of charcoal, 4 rupees; labour, 4 rupees 12 annas; contingencies, 8 annas; total, 11 rupees 8 annas.*

97. [6504] Iron ore, Monghyr. E. B. HARRIS, Esq. Found in excavating the Monghyr tunnel.

98. [7968] Iron ore, Shahabad District. R. W. BINGHAM, Esq., Hon.-Assistant Magistrate, Chynepore.

The part of the Vhyudhya Hills forming the southern portions of Shahabad, and of Mirzapore, north and north-west of the Soane River, together with Mirzapore, south of the Soane, Rewah, Palamow, and, in fact, the whole chain and spurs of the Vhyudhya range in this neighbourhood, is full of mineral wealth of various kinds, and will doubtless, in the course of a few years, when railways run down the valley of the Soane, connecting the Gangetic valley with that of the Nerbuddah, be found to yield products of immense value. Abundant quarries of the peroxide and proto-peroxide of iron, as also of iron-pyrites, abound in the most accessible portions of the Kymore range. The Kymore range is the north-easterly spur of the Vhyudhya range, and fills all Southern Mirzapore and Shahabad. Most of the ores are peculiarly rich in metal, some of them even yielding 70 to 75 per cent. of pig iron, but without accessible coal they are comparatively useless. Considerable quantities of iron, and that some of the best in India, are annually produced in Palamow, Rewah, Bidjugghur, and Singrowlie. The iron from the latter place in particular bears a high character in the market, being tough, flexible, and easily worked, while English iron, having originally been smelted from an inferior ore (the clay ironstone) and with mineral coal, is almost unworkable by native blacksmiths.

The ores are extremely rich, and the cost merely nominal, probably not more than 2 per cent. upon the cost of quarrying; and the ores being all above ground, would reduce the cost of quarrying to a minimum. One rupee per ton for royalty and cost of quarrying would give an ample margin for all contingencies, allowing rates of labour to remain as at present. Charcoal, as used by native smelters, may be obtained at 10 or 11 maunds per rupee, say 2½ to 3 rupees per ton, in the forest, to which, of course, must be added cost of carriage to site. Native charcoal is, however, made in open kilns in a most wasteful manner. Burnt in close kilns more than double the quantity, and that of a much better quality, would be obtained, while the tar and wood vinegar obtained at the same time would materially diminish the cost.*

99. [1476] Iron ore, Chundeyrie, Jhansee.

100. [983] Iron ore, hydrous peroxide in flakes and powder (Dhaoo), Gwalior. H.H. the MAHARAJAH.

Iron ore (Dhaoo) is produced in the land lying between Mouzah Sathoo Nurwaree of the Gwalior District and Punehar, i. e. about 4 coss (8 miles) from east to west, and 1 coss (2 miles) north to south; also in the hills adjoining. In that neighbourhood people dig for the ore: after digging 20 cubits deep and 50 yards square, a description of earth called dhaoo (the ore), which is like small stones, but very soft, is found. This earth is loaded on bullocks, and taken to Dhoa and Bugrowlee and other places, where it is smelted, and iron made from it.

The cost of digging and refining the ore is 12 annas per maund, as per following detail:—

	R.	A.	P.
Digging of ore	0	0	5½
Duty do.	0	0	3
Carriage do.	0	1	0
Duty paid to Zemindars	0	0	0½
Charcoal	0	8	6
Wages for one blacksmith for three hours	0	0	4½
Do. of men for working the bellows	0	1	1½
Do. of Bhistee (water carrier)	0	0	3
Total	0	12	0

At this rate, a piece of iron about 20 seers in weight is made in three hours, at the cost of 12 annas. The price in the bazaar of 20 seers of iron is 14 annas, thus a profit of 2 annas is derived by the manufacturer.*

101. [10251] Specular iron ore, of a peculiar character. Very fine specimen. Kumaon. KUMAON IRON COMPANY.

102. [10252] A peroxide, mixed with much gangue, Kumaon. KUMAON IRON COMPANY.

103. [10277] Massive hæmatite, Kumaon. KUMAON IRON COMPANY.

104. [10215] Do. Kumaon. KUMAON IRON COMPANY.

105. [1465] Iron ore. Siliceous peroxide. First quality. Tendookhera, Nursingpore.

106. [1466] Do. Second quality. Tendookhera, Nursingpore.

The ore actually worked is a large vein or lode in the limestone of the great schist formation of the Indian Geological Survey, and the only rock in its immediate vicinity is hard grey and blue crystalline limestone. It occurs to the north of Nerbudda, in the open flat country between the river and the Vhyudhya Hills. Only one mine is worked at present, but ore of a similar quality has been found at one or two other places in the neighbourhood. The only fuel used is charcoal, which is of very fair quality. Some coal mines also are situated at Mohpanee, not far from Tendookhera. The distance of fuel from mines is from 5 to 10 miles. The iron is smelted in small clay furnaces, blown by goat-skin bellows, worked by the hand. It is obtained in small lumps or blooms called 'cutcha,' or raw iron, and is afterwards reheated and hammered, and then

* CAPT. G. HAMILTON, Officiating Political Agent, *Ulwar.*
† Note by MR. BINGHAM.

* MAJOR R. J. MEADE, Political Agent, *Gwalior.*

NATIONAL ARCHIVES OF INDIA

sold as 'pucka,' or finished iron. Intermixed with the raw iron as it comes from the furnace, is a sort of crude steel, which is carefully selected and used for the manufacture of tools and agricultural implements. The ore is largely smelted by the natives at the town of Tendookhera, about 2 miles from the mines, where, during the eight dry months of the year, about sixty furnaces are worked, but the mines have now been leased to the Nerbudda Coal and Iron Company formed in London. About 5 tons 3 cwt. of iron ore, and 5 tons 12 cwt. of charcoal are used for the manufacture of 2 tons of 'pucka,' or finished iron. The ore contains, upon an average, about 40 per cent. of iron; it is of a calcareous nature, very fusible, and somewhat resembles the ores of the Forest of Dean. The ore is obtained by means of pits sunk from 30 to 40 feet, through the alluvium of the valley, to the ore. They are washed in during the rains, and require to be resunk yearly. The iron is obtained at a very small cost, as the government do not demand at present any royalty from the smelters. The fuel or charcoal is sold at from 3 to 3½ buffalo loads per rupee, which is equivalent to about 8 shillings per ton. The pucka iron sells at from 5 to 6 rupees, 12 shillings, per goan or bullock-load of 3 maunds, equal to 24 bundles, or from 4*l.* 10*s.* to 5*l.* 8*s.* per ton. The iron is sent by bullock carts and buffaloes to all fairs of any consequence within 100 miles, and in some instances is sent even 200 and 250 miles. From the iron of these mines, several years ago, a very good suspension bridge was built near Saugor.*

107. [1467] Iron ore, Azureea, Jubbulpore.

The geological description of these mines will best be obtained as well as those at Tendookhera, from the Memoirs of the Geological Survey of India, vol. ii. part 2. It may here be said, however, that the Azureea mines are situated on a hill consisting of iron ore found at 1½ feet from the surface, and extending over an area of about 60,000 yards square and 30 feet deep. The ore exists in thin *flakes* of a grey iron colour and metallic lustre. The nature of fuel used is common wood charcoal, and for refining the metal, bamboo charcoal: the fuel is brought from a distance of about 5 miles from the mines. The ore and charcoal are thrown in small quantities every half hour into an earthen furnace 5 feet high and 2 feet square; a part of the bottom of the furnace is filled with fuel only; this being kindled, a pair of bellows is applied to raise the heat, and a passage made at the side of the furnace for the melted metal to run out. Four maunds (320 lbs.) of ore and 2½ maunds of charcoal are daily used in a furnace; the fuel is used in the proportion of 5-8ths or 62 per cent. of the ore for smelting, and 1-5th more for refining the metal. A furnace furnishes daily 2 maunds (160 lbs.) or 50 per cent. of the crude iron from 4 maunds of the ore; this, when forged, yields 30 seers, or nearly 19 per cent. of wrought iron. The ore is simply dug out with pickaxes; it costs 6 pie per maund for excavating and carrying to the furnace. The fuel or charcoal costs Rs. 1-1-6 per every maund of wrought iron. The entire cost of the pure metal obtained amounts to Rs. 1-13 per maund, including labour and materials. The ore is generally sold at the works and conveyed on bullocks to different markets. When brought to Jubbulpore, the nearest market, it costs 2 annas 8 pie per maund, exclusive of duty. The specimen exhibited from Azureea, the village where it is found, is not far from the proposed branch line of the East Indian Railway to Allahabad.†

108. [10212] Iron dust, Purulia, Chota Nagpore.

109. [10213] Iron dust, Purulia, Chota Nagpore.

110. [10210] Magnetite, near Ranchee, Chota Nagpore.

Iron ore in this form, or granulated, is found lying on the surface of almost all the high grounds in Chota Nagpore; where it lies, the soil is only surface, the rocks primary formation.*

111. [7979] Hæmatite, Assam. LIEUT. W. PHAIRE.

112. [6578] Iron ochre, Gholagat, Assam. — BECKETT, Esq.

Iron is obtained from this earth, which is found in Shoroo Cacharree Mehaul, in Gholagat Sub-Division, about 15 or 18 feet under the surface of the ground.

113. [6579] Iron sand containing iron prepared therefrom. — BECKETT, Esq.

114. [6580] Iron in the rough prepared therefrom. — BECKETT, Esq.

115. [6581] Refuse after extracting the iron. — BECKETT, Esq.

116. [10211] Rusty magnetic iron ore, Ranchee, Chota Nagpore.

117. [10212] Do. Manbhoom.

Found in beds of streams.

118. [6582] Iron clay, from Gellaka Mouzah, in Seebsaugor, Assam.

119. [5305] Iron ore, Pegu.

These specimens were brought from the base and western slope of a mountain called 'Popah,' about 3,000 feet in height, 15 miles inland from the river Irrawaddy, on its left bank. The ore is found in large quantity in nodules, and is collected and smelted by the inhabitants of the neighbouring villages. They use no flux of any description in smelting. Price 4 rupees per ton, delivered at the neighbouring furnaces.†

120. [7226] Hæmatite. Makoom, Upper Assam. MAJOR H. S. BIVAR.

121. [6747] Ironstone (Laterite?), Malacca.

122. [10195] Iron sand, Moulmein.

123. [5305] Bog-iron ore, Rangoon.

CHROME.

124. [5980] Chrome-iron ore, Salem.

The chrome-iron ore of Salem is exceedingly pure, and of great value as a source of chromic acid. It is now largely imported into England.

* Local Committee, *Jubbulpore.* A. M. RUSSEL, Esq., Secretary.

† Local Committee, *Jubbulpore.*

* Local Committee, *Chota Nagpore.*

† Local Committee, *Rangoon.* MAJOR T. P. SPARKS, President.

NATIONAL ARCHIVES OF INDIA

COPPER.

Copper ores are found in several parts of India.

125. [5320] Copper ore, specimen of carbonate, Ulwar.

126. [5322] Copper ore. A carbonate. Ulwar.* H.H. the MAHARAJAH.

Copper is found but in one or two places, and its working cost has not been ascertained, as it is under the direct management of the State.

127. [5889] Copper ore. An impure carbonate, very rich. One specimen weighs nearly ¼ cwt. From Singbhoom. D. C. MACKAY, Esq.

The fuel used for smelting is charcoal made from the extensive forests in the immediate vicinity of the mines and works in Landoo, in Dalbhoom, and Singbhoom, in the south-west frontier of Bengal. The distance of the works from Calcutta is about 140 miles, and may be reached *viâ* Midnapore or *viâ* Raneegunge and Purulia.

By assay this sample is said to give copper 31½ per cent., and silver 2 oz. 5 dwts. 17 grs. per ton of ore.

128. [5890] Kunkur flux, Landoo in Dalbhoom. D. C. MACKAY, Esq.

129. [5891] Lime flux, Landoo in Dalbhoom. D. C. MACKAY, Esq.

130. [5892] Copper slag, Landoo in Dalbhoom. D. C. MACKAY, Esq.

131. [1051] Copper-pyrites, Hills of Beloochistan, Upper Sindh.

132. [1844] Carbonate of copper. LAHORE COMMITTEE, *Punjab.*

133. [5022] Copper ore. A silicate of copper, Nellore. CAPTAIN J. MITCHELL.

ANTIMONY.

134. [1474] Antimony ore from Candahar *viâ* Umritsur.

Tersulphide of antimony is said to be found in the salt range near the Keura salt mine. Vast quantities of antimony have been found by Major Hay in the Himalayan ranges of Spiti. The ore is also imported from Cabul.†

135. [1844] Antimony ore, Punjab.

136. [7230] Antimony, Sarawak.

LEAD.

The only ore of lead is the common sulphide or galena. It frequently contains silver. The specimens exhibited are few, but good.

137. [4410] Galena, very pure, Kandahar.

138. [5040] Do. in quartz. Several large specimens. Contains no silver. Kurnool. CAPTAIN J. MITCHELL.

139. [5051] Do. massive. Contains silver. Catloor, near Cuddapah.

140. [1050] Do. massive. Picked from the surface of the soil in the hills. Beloochistan.

141. [1052] Do. massive. From the mines. Beloochistan.

TIN.

The tin-ore of India and of the Archipelago is the same as that of Cornwall. It is the ordinary tin-stone, or binoxide of tin. It occurs in veins, and also in rounded masses or grains. It is often beautifully crystallized, interspersed with decomposing granite, and is generally free from sulphur and arsenic.

142. [4164] Tin ore from Larut, Malay Peninsula. FORBES BROWNE, Esq.

143. [4165] Do. from Junk, Ceylon. FORBES BROWNE, Esq.

144. [4075] Do. diffused through quartz &c., Martcham Booboo, province Wellesley.

145. [4076] Do.

146. [4077] Tin in bar, obtained from the tin-stone of Macham, province Wellesley.

147. [9362] Twelve samples of tin-ore, with prepared tin. Contains capital specimens of stream-tin. British possessions, Malacca.

148. [4833] Kensac tin, Burmah. HALLIDAY, FOX & Co.

149. [5973] Tin-stone, picked specimen in more or less perfect crystals, Malacca. F. F. GEACH, Esq.

Illustrations of Tin produce from Malacca.
HON. CAPTAIN BURN.

150. [6352] 1. Alluvial soil containing tin ore, Malacca.

151. [6353] 2. Quartz from which the tin ore is extracted, Malacca.

152. [6354] 3. Tin ore, Malacca.

153. [6355] 4. Tin when smelted, Malacca.

154. [6358] 5. Tin goblet and cup, Kassang.

* Presented by H.H. the MAHARAJAH of ULWAR.
† Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

155. [6712] Tin-ore from Kassang. J. MONIOT, Esq.

156. [6718] Do. from Tringanu, Malay Peninsula. JOSE D'ALMEIDA, Esq.

157. [6719] Tin from Pattani, Malay Peninsula. Do.

158. [6720] Do. from Johore, Malay Peninsula. Do.

159. [6721] Do. from Lanwan, Malay Peninsula. Do.

160. [5972] Do. from Lingie, Malay Peninsula. Do.

161. [6722] Do. from Pahang, Malay Peninsula. Do.

162. [6723] Do. from Kassang. F. F. GEACH, Esq.

Nature of Fuel.—Charcoal made from the Gomposs tree, is the only description of fuel employed. Its distance from the mines varies according to circumstances. If a mine is opened in the primeval forest the distance is not great, abundance of charcoal can be procured within the radius of a mile; but in some old mines in the valley of Kassang, where all the jungle has been cleared, the distance varies from 4 to 6 miles.

Method in Smelting.—A funnel-shaped blast furnace, 6 feet high and 4 feet diameter at the mouth. The sides of the trunk and funnel-hole are shaped and backed with clay. The fused matters escape from the cavity and flow continually into an exterior reservoir, hollowed out for that purpose, from which the liquid metal is ladled out into moulds, shaped in moist sand. The trunk is filled with charcoal, and combustion is accelerated by a cylindrical blowing machine, worked by eight men, of which the nozzle is introduced by an aperture. When the whole mass is brought to a red heat, the crude ore is sprinkled on top of the burning embers and kept constantly fed, by successive charges of charcoal and mineral.

Quantity of Metal obtained from the Ore.—Each charge consists of 30 piculs of washed ore containing from 45 to 60 per cent. of tin.

Nature of Mining Operations.—The ground being marked out and cleared of vegetation, a square or oblong pit is sunk, varying in depth from 40 to 80 feet, through an alluvial deposit, and the ore extracted by a series of stream works. The stanniferous deposits occur in the form of regular beds, in which the binoxide of tin is associated with coarse sand and decomposed quartz, which are removed in baskets by the Chinese coolies, arranged in heaps on the surface, and exposed to sun and rain for a month or two. The washing is conducted in wooden jutters, through which a stream of water is made to flow, the dirty ore or 'work' thrown into coarse wicker baskets immersed in water in the wooden trough and shaken about: the metallic ore and finer particles of sand and decomposed quartz are washed through the crevices of the basket into the wooden trough, through which the stream of water flows, and is there kept in constant motion by several coolies with spades, by which means all the dirt and lighter particles of sand are carried off by the stream, and the heavy ore collected in the heap when the flow of water is stopped, and the metallic ore conveyed to the smelting shed.

Cost of Ores.—Fifty per cent. of the reduced metal.

The annual importation of tin from these mines to Singapore is, on the average, as follows:—

Tringanu	150 piculs	or 178	cwt.
Pattani	100	„ 118	„
Johore	250	„ 296	„
Lanwan	2,000	„ 2,375	„
Lingie	1,000	„ 1,187½	„
Pahang	3,000	„ 3,562½	„
Kassang	3,000	„ 3,562½	„

Native Metals.

The only representative of this subdivision is gold, which is found in a number of districts throughout India, and attempts are, it is said, about to be made in the Belgaum district to turn to account the gold resources of the South Maharatta country.

163. [6447] Gold sand. From Purulia, Chota Nagpore.

164. [6448] Do. From Purulia, Chota Nagpore.

Gold dust is extracted from sand in the beds of rivers in Maunbhoom and Palamow, but not in large quantities.*

165. [3042] Gold-washers' sand. Sumbulpore, Cuttack.

Gold-washers' sand from Sumbulpore. It is a matter of regret that a more ample specimen has not been forwarded. Such as it is, the committee submit it. The tools and vessels used in washing are so primitive and simple, that it has not been thought worth while to forward specimens.†

Gold deposits from Rangoon, viz.:

166. [10056] Deposit from which gold is washed on the Meh-Tyne stream, a tributary of the Shoay Gyeen River.

167. [10055] Deposit taken from the bottom of Shoay Gyeen River, containing gold.

168-70. [6466-7-8] Sand containing gold, deposited by the Nars Rivers at the mouth of the Martaban stream, a tributary of the Shoay Gyeen River.

171. [3043] From Meh-Tyne stream, a tributary of the Shoay Gyeen River.

172. [3048] From the sewers of the Meh-wine stream, a tributary of the Beeling River.

173. [2102] Gold dust from Jubbulpore.

The gold dust is found in the Paiqdhur Nullah, in the Seonee district. The little stream rises in the Konye range of hills, and falls into the river Wyne-Gungah. The gold is obtained by washing the sand, and the natives say they never get more than four annas worth by a day's work, and would consider it unlucky if they did, as the goddess who is supposed to make it would then leave their locality.‡

* Local Committee, *Chota Nagpore.*
† Local Committee, *Cuttack.*
‡ Local Committee, *Jubbulpore.*

NATIONAL ARCHIVES OF INDIA

174. [4491] Gold and dust. Luckimpore, Assam. LIEUT. W. PHAIRE.

This specimen is from the Dikerie river in the Tezpore district, but all the rivers in the north of Assam probably contain the auriferous metal, and it would appear that small stratas exist in the hills, as on approaching them, the grains of metal found are of larger size. The value of the gold on the spot is rupees 16 for quantity of the weight of a rupee piece.

The Assamese use no cradle, their mode of washing being simple and rude. A spot is selected, and after digging down 4 or 5 feet, the sand is taken out and washed by passing water over it in any long leaf found at hand. The dust is then put into a small wooden or brass cup and a small quantity of quicksilver added; the mass is then gently moved together, the mercury taking up the gold and leaving the sand. The water is then drained off and the mercury with the gold placed in a piece of charcoal, the centre of which has been hollowed out; this is then put into the fire and the smelting takes place, the gold-finder using a piece of bamboo as a blow pipe; when the whole mass is red hot, the charcoal containing the gold is taken out, dropped into water, and the shining metal appears.

174A. [3047] Gold from the Dorjmoh River, Assam.

175. [2101] Gold washings from Peshawur.

Gold is found in minute scales in the sandstone of the Salt range, a lower range of hills running parallel to the Himalayan chain, between the rivers Indus and Jhelum; it is also found in small quantities in the sands of the Indus, Jhelum, Beas, and Sutlej; but the occupation of gold-washing is not very remunerative, amounting on an average to not more than from 3*d.* to 6*d.* a day, and the proceeds of the annual lease of gold-washing amounted last year to but 84*l.* Gold dust is also imported from Elaché, in Khoktan.*

176. [3045] Gold dust found in beds of rivers at Purnalia, Chota Nagpore.

177. [3046] Gold manufactured from the same, Chota Nagpore.

178. [9363] Auriferous rock, from Candahar.

179. [4451] Burmese gold dust. Messrs. HALLIDAY, FOX & Co.

Subdivision IV.—ADAPTATION OF METALS TO SPECIAL PURPOSES.

a. and *b.*

180. [5307] Refined iron from Rangoon.

From iron of this description blacksmiths manufacture all the implements for common use throughout Burmah. In Pegu, English iron and tools of British manufacture are rapidly supplanting the native articles. Price 12*l.* per ton on the spot.†

181. [5314] Crude iron from Assam.

182. [10201] Do. KUMAON IRON COMPANY.

183. [10253] Welded iron from Wuzeeree Hills.

184. [10254] Iron from Peshawur.

185. [10255] Iron slag from Kangra Hills. GOVERNMENT.

Magnetic iron ore is found in considerable quantity, and of a very fine description, closely resembling the Swedish, in the Himalayas, about 30 miles north-east of Dhurmsala, in the Kangra district; close to the sanitarium of Dalhousie; in the native states of Maudi and Kotkai; in the Sulymani range near Kolachi, on the western frontier of the Punjab. In all these places mines are worked, but iron is also to be found in the Salt range, in the Afidi hills to the west of Peshawur, and the Mewatti hills of the Goorgaon district. But there is one great obstacle to the successful working of iron mines in all these localities, viz., the absence of coal. In the year 1858 sixty bars of Kangra iron were sent to England, in order to ascertain the quality of the metal and its value in the European market. On being tested at the Atlas works of Messrs. Sharp, Stewart & Co., of Manchester, while the best English iron yielded at a pressure of about 56,000 lbs. to the square inch, the Kangra iron, in the state in which it was received, required a force of 61,300 lbs. per square inch to break it; and, after being hammered in Manchester sustained a pressure of 71,800 lbs. The quality was considered 'equal to that of Yorkshire iron.' At present, however, its cost in Kangra, about 30 miles from the mines, is no less than 14*l.* a ton.*

186. [7222] Iron for railway purposes. DR. HUNTER, *Madras.*

187. [5298] Crude iron, Cuttack.

188. [5299] Do.

189. [5299] Do. Pal Lahara.

190. [5304] Do. Dhenkanal.

191. [5306] Do. Talchere.

192-3. [1477-78] Bloom, or pig iron, Gwalior. H.H. the MAHARAJAH.

194. [10214] Iron, Chota Nagpore.

195. [5823] Iron smelting, Shahabad.

196. [7949] Pig iron from Sirkee, Rohtass Spur, Kymore range. R. W. BINGHAM, Esq.

197-9. [7950-53, 7959] Do. from Biggeryghur, Rohtass Spur, Kymore range. R. W. BINGHAM, Esq.

200-2. [7958, 7961-3] Do. from Singrowlee, Rohtass Spur, Kymore range. R. W. BINGHAM, Esq.

203-6. [7954-5-7, 7960] Do. from Sirkee, Rohtass Spur, Kymore range. R. W. BINGHAM, Esq.

207. [9361] Iron from Gholagat. — BECKETT, Esq.

208. [10199] Cast-iron railway bars. KUMAON IRON COMPANY.

209. [10200] Do. bed. KUMAON IRON Co.

* Central Committee, *Lahore.*

† Local Committee, *Rangoon.*

* Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

210. [2425] Cast iron plate. KUMAON IRON COMPANY.

211. [6726] Ingot of iron. Cochin China. G. ANGUS, Esq.

211A. [4835] Iron, Burmah. HALLIDAY, FOX & Co.

212-3. [5970-71] Sixteen bars of iron. Chittledroog, Mysore.

214. [5969] Ingots of steel. Chittledroog, Mysore.

215. [5948] Wire rope, 1¾ inch galvanized. CALCUTTA GOVERNMENT.

216. [5263] Iron rope, galvanized, from Shalimar Patent Rope Works, Calcutta. Messrs. AVISHER & Co.

217. [6508] Steel wire (used as strings for the 'Citar'), Cuttack.

218. [2583] Do. Bangalore, Mysore.

219. [5893] Slab copper, made from the ores of Landoo, in Dalbhoom. D. C. MACKAY, Esq.

220. [5894] Sheet copper, rolled in Calcutta mint from the above. D. C. MACKAY, Esq.

221. [4834] Copper from Rangoon. Messrs. HALLIDAY, FOX & Co.

222. [5300] Lead from Rangoon. GOVERNMENT.

Exported by sea from Rangoon, in the year 1860-61, to the value of 12,000*l.**

223. [4836] Lead from Rangoon. Messrs. HALLIDAY, FOX & Co.

IV.—NON-METALLIC MINERAL PRODUCTS.

Subdivision I.—MINERALS USED AS FUEL.

a. Coal and derived products.

Series of Indian coals, collected and exhibited by PROFESSOR OLDHAM, Superintendent Geological Survey of India :—

LOCALITIES, ETC.

224. [1464] *Kurhurbalee* is in the district of Hazareebaugh. It contains several valuable seams of coal varying from 7 to 16 ft. in thickness, and is worked by the East Indian Railway Company. In 1860-61, 275,256 maunds of coal were raised. This coal is superior to any of the coals raised elsewhere in Bengal. A comparative trial in the locomotives of the East Indian Railway, continued for three months, showed a superiority, amounting to 13 per cent., over the good steam coals of the Raniganj field.

225. [1463] *Kasta* is situated to the north of the Adjai River, in the extreme north of the great Raniganj field. Here an immense seam of upwards of 30 ft. in thickness crops to day, and is worked in open quarries. The lower 11½ ft. of this are of superior quality, and from these the specimen has been selected, which is of a quality much above the *average* of this coal. At Kasta 11,892 maunds were raised in 1860-61. It is less accessible than other collieries.

226. [1480] At *Chokidanga*, the most northerly of these, a fine seam of 15½ ft. is worked. The average production of three years has been 360,000 maunds.

227. [1431] At *Toposi*, a seam (higher in the series of rocks) of 22 ft. is worked. In 1860-61, 300,000 maunds were raised.

228. [1487] *Bansra* is another seam still higher in the series, of about 7 ft. in thickness. In 1860-61, 70,000 maunds were raised.

229. [1462] *Mangalpur*, a long-established colliery : a seam of 15½ ft. (including 9 in. of *shale*) is worked, yielding 1,000,000 maunds in 1860-61.

The Chokidanga, Toposi, Bansra, Mangalpur, Babùsol, and Harispur collieries are all on the Singàrun, a feeder of the Damùda River, and in the eastern portion of the great Raniganj coal field.

230-1. [4697-4695] *Babùsol* and *Madhubpur* (or Harispur) are situated in the lower portion of the Singàrun stream, and are the most eastern collieries in the field. From *Babùsol* 84,000 maunds, and from *Harispur* 440,000 maunds, were raised in 1860-61.

232. [1462] *Rogonathchuk* is on the banks of the Damùda River, and is one of the oldest collieries in the field. The bed is 12½ ft. thick, and yielded, in 1860-61, 300,000 maunds of coal.

* Local Committee, *Radgoon.*

NATIONAL ARCHIVES OF INDIA

233-4. [4702, 4696] *Raniganj.* — The most extensive workings in the field are near the Damùda River. The entire seam is 13 ft. in thickness, divided by a band of shale into two seams of 9 ft. and 3 ft. From each of these, specimens are sent. The Raniganj workings yielded 1,600,000 maunds in 1860-61.

235. [4700] *Bhangaband* is in the same neighbourhood, and yielded, in 1860–61, 250,000 maunds.

236. [1208] *Banali* is a recently opened colliery, where a fine seam of 12 ft. is worked at a depth of 43 ft. below the surface.

237. [1484] *Futtehpur* is on the Grand Trunk Road. The bed is of 10 ft. in thickness, and of excellent quality. In 1860-61, 150,000 maunds were raised.

The Rogonathchuk, Raniganj, Bhangaband, Banali, and Futtehpur collieries are in the middle of the Raniganj field.

238. [1209] *Hattinal.*— This colliery is in the west of the Raniganj field, near the junction of the Baràkar and Damùda. The seam is 8½ ft. thick, the pits only 42 ft., the out-turn in 1860–61, 200,000 maunds.

239. [4694] *Chinakùri* (Cheenacooree) is close to Hattinal, and coal has long been worked here. In 1860–61, its out-turn was 3,290,000 maunds.

240. [4701 A] *Dùmarkùnda* lies to the west of the Baràkar, and is the most westerly colliery now worked in the field.

These three collieries, Chinakùri, Hattinal, and Dùmarkùnda, are all in the western portion of the Raniganj coal field.

241. [3195] At *Panchbyni* a 7 ft. seam has been worked to some extent in open quarries.

ALUBERA COLLIERIES.

242. [1212] At *Chilgo* a 5 ft. seam yielded 20,000 maunds in 1860–61.

243. [1211] At *Oormoo*, two seams, of 7 ft. and 3 ft. produced 30,000 maunds in 1860–61, and at *Bankijora*, a thick bed of 19 ft., worked in open quarries, produced 30,000 maunds. The Chilgo, Oormoo, and Bankijora collieries are often spoken of as the Alubera collieries.

244. [1485] At *Bhorah*, a thick seam of 17 ft. produced, in 1860–61, 700,000 maunds. This colliery is only 20 miles from the Ganges. It is worked in open quarries.

These collieries are all in the Rajmahal hills. That of Panchbyni is on the Brahmini stream, at the extreme south of the hills. The Alubera collieries are near the Bansloi stream in the centre of the hills; and the Bhorah colliery to the north end.

The foregoing 21 specimens give a fair average representation of the coals of Bengal. They are from three distinct districts: 1,—the detached coal field of Kur-

Names of Collieries	Thickness of seam in feet	Composition of Coal			Proprietors
		Carbon	Volatile matter	Ash	
Kurhurbalee	7 to 16	66·70	24·80	8·45	East Indian Railway Company
Futtehpùr	10	63·80	25·00	11·20	Messrs. Apcar & Co.
Dùmarkùnda	10	62·40	22·60	15·00	Bengal Coal Company
Kasta	30	61·40	28·00	10·60	East Indian Coal Company, and Messrs. Nicol & Sage
Chokidanga	15½	56·80	34·00	9·20	Messrs. Nicol & Sage
Chinakùri	10½	53·20	35·50	11·30	Bengal Coal Company
Hattinal	11	52·60	33·00	14·40	Beerbhoom Coal Company
Madubpur (Harispur)	17	51·10	35·40	13·50	Bengal Coal Company
Raniganj	9	50·80	36·00	13·20	Do.
Do.	3	50·30	36·30	13·40	Do.
Toposi	22	49·20	35.40	15·40	East Indian Coal Company
Bansra	13	47·60	40·00	13·00	Do.
Rogonathchuk	10½	46·90	35·00	18·10	Beerbhoom Coal Company
Babùsol	17	46·00	35·40	18·60	Bengal Coal Company
Chilgo	5	45.50	43·50	11·00	Messrs. Eaton & Browning
Oormoo	7 & 3	45·00	44·60	10·40	Do.
Panchbyni	7	44·20	34·10	21·70	Messrs. Mackey & Co.
Mangalpur	15½	43·90	38·40	17·70	Beerbhoom Coal Company
Bankijora	19	43·50	42·00	14·50	Messrs. Eaton & Browning
Banali	12	42·60	44·20	13·20	Beerbhoom Coal Company
Bhangaband	7	40·30	28·40	31·30	Bengal Coal Company
Bhorah	17	25·20	37·20	37·60	East Indian Railway Company

NATIONAL ARCHIVES OF INDIA

hurbalee: 2nd,—the great coal field of Raniganj, or as it is not uncommonly called, the Burdwan field: and 3rd,—the Rajmahal hills. The foregoing table is a general classification of all these coals, with the names of the proprietors, and arranged in the order of the relative amounts of fixed carbon which they contain, which may be taken as a fair index of their relative value as fuel.

If, on the other hand, these coals were arranged according to the relative amounts of ash in each, which for many purposes is a more useful classification, they would stand as follows:—

	AMOUNT OF ASH.
Kurhurbalee	8·45
Chokidanga	9·20
Oormoo	10·45
Kasta	10·60
Chilgo	11·00
Futtehpur	11·20
Chinakùri	11·30
Bansra	13·00
Banali	13·20
Raniganj (average of 2 seams)	13·30
Madubpur (Harispur)	13·50
Hatinal	14·40
Bankijora	14·50
Dùmarkùnda	15·00
Toposi	15·40
Mangalpur	17·70
Rogonathchuk	18·10
Babùsol	18·60
Panchbyni	21·70
Bhangaband	31·30
Bhorah	37·60

Some curious *Ball-Coal* from the Dùmarkùnda mines is also sent.

Full statistics of the amount of coal raised in the years 1858-9-60, are given in the Memoirs of the Geological Survey of India.*

The total returns give an average of coal yield for the past three years of 87,37,454 maunds, or about 320,631 tons. But it is scarcely just to consider this as giving a fair mean of the present production, for during the first of these years there were, as is well known, disturbing causes at work tending to injure the regular trade of the country—and a fairer average, though determined by too small a number of years, will be obtained by taking the mean of the last two years' produce. This will give 100,25,020 maunds, or about 367,890 tons in the twelve months.

The returns also show one important and interesting fact, namely, that however the local out-turn may have increased or diminished, as affected by local causes, the general out-turn has steadily and markedly increased, apparently indicating a healthy and sound extension of trade and commerce.

The total out-turn for 1860 (that is, for the twelve months ending October, 1860) was 100,88,113 maunds, or 370,206 tons, an amount about only the 200th part of the coals raised annually in Great Britain, viz. 72 millions of tons, but still evidencing a large and increasing commerce, and the spread of many of the arts of civilisation.

245. [3196] Coal, indurated and rendered columnar by the intrusion of trap rock, Lower Damùda.

The coals in the lower portion of the Damùda Coal Field are very frequently found intersected with basaltic trap, and in most cases the structure of the coal is entirely changed. The coal has become beautifully prismatic or columnar, and this may be seen over large areas. The columns are often not more than half an inch diameter, and generally are so completely separated, that it is exceedingly difficult to procure a specimen which will show more than one single prism.*

246. [4701 B] Ball Coal, Dùmarkùnda.

247. [9322] Coal from Tirop, Assam.

---

248. [5578] Coal, Bancoorah. Two samples. A steam coal. BABOO GOVIND, Pundit of *Bancoorah.*

249. [1468] Do. Mohpanee, Nursingpore, Jubbulpore.

The coal mines in Nursingpore are entirely confined to the south side of the Nerbudda Valley, where they form a strip or band of irregular width, along the foot of the Puchmurree hills. Thin seams of inferior coal, from 18 inches to 3 feet thick, have been found also on the Shere River, but the only workable seams are at Mohpanee on the Seeta-Rewah River. At this point three seams, respectively 10 feet, 6 feet, and 3 feet 6 inches thick, are found. The coal is of very fair quality, resembling that of Bengal, and small quantities that have been used experimentally by the Great Indian Peninsular Railway Company and the Indian Navy, have been very favourably reported of. These mines have been leased to the Nerbudda Coal and Iron Company.†

250. [10281] Coal, Hills, Manbhoom, Chota Nagpore. A surface coal.

251. [10285] Do. Hills near Hazareebaugh, Chota Nagpore. A surface coal.

252. [10279] Do. near Purulia, Chota Nagpore. A surface coal.

253. [6713] Do. from Bintaloo, Borneo. H. C. READ, Esq.

254. [6356] Do. Malacca. HON. CAPTAIN BURN.

COMPOSITION.	
Water	2·50
Volatile Matter (gas)	20·45
Carbon	75·75
Ash	1·30
	100·00

Coke (77·05) very loose and porous.

b. Lignite and Peat.

255. [5576] Lignite, Sumbulpore.

256. [5576] Do. Talchere.

257. [17] Do. Rajmahal.

258. [6503] Do. Chittagong.

This specimen was found up the Kurnafulloo river, amongst the hills; exact locality unknown.‡

259. [5577] Do. Talchere.

---

* The above specimens of coal were contributed by the various proprietors, and are sent for exhibition by PROFESSOR OLDHAM, under whose directions the above analyses were made.

* Also exhibited by PROFESSOR OLDHAM.
† Local Committee, *Jubbulpore.*
‡ Local Comittee, *Chittagonge.*

NATIONAL ARCHIVES OF INDIA

260. [10202] Lignite, Assam. — BECKETT, Esq.

261. [1824] Do. 'Salajit,' Kangra, Punjab.

c. Bituminous Bodies and native Naphtha.

262. [5183] Petroleum, Yuynanyoung, Burmah.

Supply unlimited, but price high, being a close monopoly of the King of Burmah.*

263. [5705] Petroleum, Assam. J. N. MARTIN, Esq.

264. [5706] Do. Do. Do.

265. [5708] Cheduba petroleum, Akyab.

266. [5707] Do. Akyab.

It is used by natives for burning; by Europeans for medical purposes; by both for varnish and to preserve wood. Also put on the bottoms of boats, it being an excellent preservative of wood from insects and worms. In the Island of Ramree there are 13 wells, in Cheduba 22 wells. Each well produces about 2 maunds per season, the aggregate produce of all the wells being 70 maunds per annum. The produce might be increased some 10 to 20 maunds by digging more wells. No petroleum is exported from the province. The petroleum is thick and dark coloured.†

267. [5729] Ramree naphtha, Akyab.

Used as varnish for oiling boats, posts, &c. There are 2 wells; they each produce about 14 maunds per annum. No great increase is expected. The naphtha is clear and bright, and none is exported. Price from 6 to 7 rupees per maund of 80 lbs.‡

268. [5716] Petroleum.

269. [4810] Petroleum, Rangoon. HALLIDAY, FOX & Co.

270. [10702] Do. Mangalore. V. P. COELHO.

271. [6337] Do. Minia Kayo (?) Malay. G. ANGUS, Esq.

272. [10702] Do. Mangalore. V. P. COELHO.

Subdivision II.—*a.* FOR PURPOSES OF CONSTRUCTION GENERALLY — SILICEOUS OR CALCAREOUS FREE-STONES AND FLAGS, GRANITES, PORPHYRITIC AND BASALTIC ROCKS, SLATES.

Although India affords abundant illustrations of every stone belonging to this subdivision, the present Exhibition, from the absence of their international commercial value, does not attempt to display them in anything like adequate proportions. Nevertheless, many of the specimens supplied are of great interest. Most of them need only to be named: whenever a description is required, it will be found in its proper place.

273. [10232] Moss sandstone, Banda.

274. [10233] Do. Banda.

275. [7917] Sandstone, Chynepore Spur, Kymore Range, of Vhyndhya Hill. R. W. BINGHAM, Esq.

276. [7926] Do. Do. Do.

277. [7918] Do. Do. Do.

278. [7930] Do. Do. Do.

279. [7921] Do. Do. Do.

280. [7919] Do. Do. Do.

281. [7932] Do. Do. Do.

282. [7922] Do. Do. Do.

283. [7920] Do. Do. Do.

284. [7925] Do. Do. Do.

285. [7927] Do. Do. Do.

MR. BINGHAM adds the following remarks:—The sandstones of this range have a high commercial value at Chunar and Mirzapore, being used as flagstones, and for ornamental purposes. The stones at those places owe their advantage to the proximity of the Ganges, which affords an easy river carriage; otherwise they are the worst and most destructible description of stone in the range. The millstones of Chynepore, Sasseram, and Tilowlhoo (perhaps also Ackbarpore), are famous, but must always be dear in a distant market for want of river carriage. The Soane causeway and the Koylwan railway bridge are built of the dense sandstone of Sasseram, while even little quantities are found in the higher portions of the range towards Rohtass. The best stone, while easily workable, is almost as hard as granite, and may be had of any colour, viz., white, crystalline, blue, grey, and all shades to a dark red.

286. [5875] Flexible sandstone, Ulwar.

287. [7844] Do. Jhend.

288. [4275] Do. Jubbulpore.

289. [4276] Moss sandstone, Do.

290. [6727] Sandstone, Singapore. COL. COLLYER.

291. [7946] Old red sandstone from the Sasseram spur of the Vhyndhya Hills.

291A. [9286] Micaceous sandstone. Miker Hills, Assam.

292. [10280] Slate found near Purulia, Chota Nagpore.

293. [6524] Do. Monghyr.

* Local Committee, *Rangoon.*
† Local Committee, *Akyab.*
‡ Local Committee, *Akyab.*

NATIONAL ARCHIVES OF INDIA

294. [5400] Slate found near Cossia Hills.

295. [7150] Grey slate, 'Teluck matee,' Cuttack.

Grey slate from Nilgiri, in Orissa, used for the purpose of making the marks on the forehead, nose, arms, and breast, more particularly affected by Hindoo devotees, and also by high-class natives in the Madras Presidency, and by Stirling called 'Meerschaum.' *

296. [5301] Kharee or slate stone, Cuttack.

Specimen of what is locally called 'Kharee,' which is used, among other purposes, for the manufacture of pencils and balls for writing on the ground or floor, being so used in all rural schools, and by native accountants.†

297. [5399] Slate pencils. H.H. the Rajah of Ulwar.

298. [5295] Moongnee stone or chlorite slate, Orissa.

Specimen of what is locally known as *Moongnee Stone*, apparently a kind of chlorite slate. According to locally received accounts, this stone, when freshly quarried, is comparatively soft and easily workable, but by long weathering becomes highly indurated, black and bright. It comes from the hill state of '*Nilgiri*,' in Orissa, where extensive quarries are said to exist. This stone is used principally for the manufacture of various utensils. Ido's are also made of it, and if the popular assertion that it is the true '*Moongnee*' be accepted, this stone is that on which the finest specimens of native sculpture extant in the province are executed, to wit, the '*Aroon Khumba*,' a polygonal column of considerable grace and beauty now standing before the principal entrance of the Pooree Temple; also the elaborately carved and figured slabs that adorned the top and sides of the doorways of the old Temple of the Sun at *Kanarac*, in the same district, and the gigantic figures of certain native deities of *Jajpore*, in the Cuttack district. It is probable, however, that '*Moongnee*' is a general term confined, not to one species of stone, but applying to several, and that the specimen is what is called the '*Kharee*' or slate '*Moongnee*.' ‡

299. [7912] Limestone deposit overlying the old red sandstone, Rohtass Spur, Kymore range. R. W. BINGHAM, Esq.

300. [7931] Limestone from the Mussaye quarries, Chynepore Spur. R. W. BINGHAM, Esq.

301. [7914] Do. Do. Do.

302. [10283] Do. from hills near Hazareebagh. R. W. BINGHAM, Esq.

303. [10284] Do. Do. Do.

304. [7945] Mountain limestone, underlying the old red sandstone of the Rohtass range. R. W. BINGHAM, Esq.

305. [7933] Mountain limestone underlying the old red sandstone of the Rohtass Pass. R. W. BINGHAM, Esq.

306. [7913] Limestone from the Mussaye quarries, Kymore. R. W. BINGHAM, Esq.

307. [7915] Do. from the Mussaye quarries, Kymore. R. W. BINGHAM, Esq.

308. [7916] Do. Do. Do.

The so-called mountain limestone underlies the whole of the Kymore range in Shahahad, and it also shows itself along the valley of the Soane as far at least as Mungeysur peak in Mirzapore. In some parts, as in Rohtass, it crops up boldly to 200 or 300 feet, forming a sloping base to the precipitous sandstone rock. In these places there appear to be three well-defined strata, viz. an upper one of a yellowish blue mixed with disintegrated sandstone, iron-pyrites, and chalk,—all in thin plates. Below that a more bluish grey limestone with occasional calcspar crystals again is found, but generally of the same nature as a German lithographic stone.

Under the aforesaid strata lies a very dense bluish-grey limestone mixed with veins of calcspar. It is not used by native lime burners, as being intractable. This is the lowest stratum, and would be an almost indestructible building or flooring stone from its great hardness, much harder than granite, and approaching to porphyry. It may be had in large blocks, and, if sawn into slabs, would be a very handsome building stone, bluish-grey with white streaks, and moreover it would probably make a superior kind of lime. Immense quantities of lime are made from the quarries of the western bank of the Soane, and exported down the Soane and the Ganges as far as Monghyr. Perhaps 300,000 to 400,000 tons are made annually, and the material is inexhaustible. The same limestone rock crops out on the northern face of the range at intervals, between the Soane river and Mirzapore; and again, especially in the singular and interesting limestone caverns of Goopteswar in the valley of the Doorgowtee River, at Beetree Band, in Khawah Koh at Mussaye, on the Sooreh River, and near Mirzapore. With canals and tramways these quarries could supply all Northern India with the finest lime in the world. The cost of the lime at these quarries varies from 6 to 16 rupees per 100 maunds, or, say 5 to 14 shillings per ton. The present system of lime-burning is a very imperfect one, and indeed only suited to native wants, but with European supervision, although the material could not perhaps be produced cheaper, it could be produced with much more certainty and evenness in quality.*

309. [1471] Limestone from the vicinity of Jubbulpore.

310. [1472] Do. Do.

311. [1473] Do. Do.

312. [1469] Do. Do.

313. [1470] Do. Do.

There is close to Jubbulpore a range of low hills within a circumference of about ten miles, interspersed with masses of limestone both above and below the surface. The fuel generally used and most available for burning

* Local Committee, *Cuttack*.
† Local Committee, *Cuttack*.
‡ Local Committee, *Cuttack*.

* Note by R. W. BINGHAM, Esq.

NATIONAL ARCHIVES OF INDIA

the lime is brushwood. It is cut and brought from a distance of 7 or 8 miles. The stone is broken into fragments of 6 to 12 inches in size, then piled like a dome over a hole of about 9 feet diameter dug in the ground, and a passage left for introducing the fuel. This kiln is kept burning continually for the whole of the day, and the lime removed on the following morning. The fuel is used in the proportion of 40 maunds to every 75 maunds of limestone. Seventy-five maunds of the stone yield about 50 maunds of well-burnt lime. The stone is simply collected and broken up by manual labour, and the cost of collecting and putting it in the kiln, amounts to 3 rupees for every 100 maunds of lime. The fuel costs from 5 to 8 rupees for every 100 maunds of lime. The entire cost of preparing the lime varies from 8 to 10 rupees per 100 maunds. The lime is at present only used in the city and station of Jubbulpore, and the locality is leased by Government to a farmer from year to year for a trifling sum; but the railway works shortly to commence will enhance its value. The hills are conveniently situated both as regards the line of railway to Bombay as well as to Mirzapore.*

313A. [9294] Limestone from Assam.

314. [9800] Magnesite, Salem. DR. HUNTER.

315. [9801] Dolomite, Cuddapah. DR. HUNTER.

316. [9802] Mountain limestone, much used in Madras. DR. HUNTER.

317. [9803] Grey hydraulic limestone, banks of Godavery. DR. HUNTER.

318. [9804] Slaty grey limestone, containing magnesia, Kurnool. DR. HUNTER.

319. [9805] Nodular limestone or kunkur, Bellary. DR. HUNTER.

320. [9806] Nodular stalactitic limestone, Bangalore. DR. HUNTER.

321. [9807] Black slaty limestone, Cuddapah. DR. HUNTER.

322. [9808] Brown slaty limestone, Guntoor. DR. HUNTER.

323. [9809] Blue nodular limestone, Ennore, near Madras. DR. HUNTER.

324. [6502] Limestone, Chittagong.

325. [7965] Limestone deposit, Kymore range.

326. [9786] Twelve varieties of building stones used for railway purposes, Madras. E. W. BENNETT, Esq.

327. [6724] Granite, Singapore. COL. COLLYER.

328. [6725] Do. Do. Do.

328A. [6746] Granite, Malacca. T. NEUBRONNER, Esq.

329. [7924] Porphyritic granite from the upheaved range of isolated rocks at Burnmonee, eight miles north of Sasseram, and ten miles from the nearest hills of the Rohtass range. R. W. BINGHAM, Esq.

330. [7937] Porphyritic granite from do.

331. [7932] Do.

332. [7935] Do.

333. [7929] Do.

334. [7924] Do.

335. [7938] Quartzose conglomerate from the upheaved Plutonic rocks at Sonar, near Rohtass range.

336. [9225] Rough slabs of slate from Karakambady, in the Chendraghiri Talug, North Arcot.

This description of slate is found in abundance in quarries in the Karakambady jungles, which belong to the Poligar of that place. When first taken from the quarry it is very soft, and can easily be cut into slates, or otherwise, as required.

b. Massive Minerals used for Ornament, Decoration, and the Fine Arts.

The marbles are few in number, and give an imperfect notion of the varieties existing in India. The collection of marbles made by Messrs. SCHLAGINTWEIT, under the direction of the late East India Company, and deposited at the India Museum, Fife House, together with others there exhibited, furnish proof of the varieties to be met with.

337. [9791] White saccharine marble, from the banks of the Nerbudda.

Bhera Ghât on the Nerbudda near Jubbulpore (ten miles), on the line of the railway to Bombay. The marble is plentiful and easily accessible. It has been used in a limited degree at Jubbulpore, sometimes to make lime, and other times for metalling roads. It is made up into images by natives, but does not take a good polish. A block was sent to the late Paris Exhibition, and pronounced to be equal to Italian marble for statuary purposes.*

338. [9821] Three slabs of polished marble.

339. [9822] Six do.

340. [9789] Crystalline marble for statuary, Tinnevelly. DR. HUNTER.

341. [9790] Do. in large grains, Rangoon, DR. HUNTER.

* Local Committee, *Jubbulpore.*

* Local Committee, *Jubbulpore.*

NATIONAL ARCHIVES OF INDIA

342. [9796] Green marble passing into serpentine, Cuddapah. DR. HUNTER.

343. [9792] White calcareous spar, Masulipatam.

344. [9793] Pink calcareous spar, Travancore.

345. [9794] Rhomb spar, Nellore.

346. [9795] Satin spar, Hyderabad.

347. [1129] Alabaster, Boogtee Hills, near Jacobabad.

348. [9797] Serpentine, Nellore.

349. [9798] Steatite, Madras. DOCTOR HUNTER.

350. [9799] Potstone for carving images, Chittoor. DR. HUNTER.

351. [4782] Steatite, Burmah. Messrs. HALLIDAY, FOX & Co.

352. [5297] Do. Do. RANGOON COMMITTEE.

353. [5294] Boulmala stone, Cuttack.

Procured from the hill state of *Dhenkanal*, in Orissa: this is used to make the little tripods on which sandal-wood is ground, and the small mortars used by natives.

354. [5296] Dalimba stone, Cuttack.

A hard granulated coarse stone, very common, and worked into utensils of various kinds.*

355. [4838] Burmese stone. HALLIDAY, FOX & Co.

356. [10144] Carbonate of lime, Calcutta. KANNY LOLL DEY.

357. [1816] Iceland spar (Surma Safed), Kabul.

This mineral is found in rocks in Kabul, and is extracted and broken into crystalline fragments, more or less opaque, which belong to the rhombohedral system. It is employed by the natives as an astringent in ophthalmia, gonorrhœa, and other fluxes, in doses, internally, of 7$\frac{5}{10}$ grains, and also externally as a local application. It is called Surma Safed, or white antimony, from being thought to be similar to black antimony, the common tersulphide of that metal. Price 3*d.* per lb.

358. [7911] Indurated potstone, from the Mussaye quarries, Spur of Kymore range, Chynepore. R. W. BINGHAM, Esq.

359. [7940] Do. Quoindee quarries. R. W. BINGHAM, Esq.

360. [7936] Do. from old red sandstone of the Rohtass Pass, Kymore range. R. W. BINGHAM, Esq.

361. [7941] Indurated potstone, from the Quoindee quarries. R. W. BINGHAM, Esq.

362. [7944] Do. Do. Do.

363. [7943] Do. Do. Do.

364. [7942] Do. Do. Do.

365. [7910] Do. Do. Do.

It is found in several parts of the range, and from some quarries can be had in large slabs, and in great varieties of colour. It takes a high polish, and might be used for a great deal of ornamental work. Want of cheap carriage is against its being much worked. It is at present simply taken to Benares for the purpose of making images of gods for temples of private worship, or used locally. Although it has many of the qualities of, and is called, 'indurated potstone' by Colonel Sherwill in his Geological Survey, it is not potstone, but rather a fine sandstone, stained of a dark hue, varying from greenish to dark brown (and, when polished, black), by some mineral oxide, and hardened by igneous action. It is a useful stone, and deserves to be better known.*

366. [9811] Black mica.

367. [9812] Mica.

368. [9813] Do. from Behar.

369. [10282] Do. Chota Nagpore.

Mica is exported from Bombay in considerable quantities. In the year 1861, 5 tons of the value of 146*l.* were exported.

370. [7152] Talc slate. Cuttack.

c. Cements and Artificial Stones.

With the exception of gypsum for plaster, the only farther illustrations of this subdivision are supplied by—

371. [2927] Two large slabs of cement and concrete, Bhagulpore. J. SANDYS, Esq.

372. [4787] White lime, Burmah. Messrs. HALLIDAY, FOX & Co.

373. [4762] Red lime. Do. Do.

374. [6745] White coral, for making lime, Malacca. T. NEUBRONNER, Esq.

Subdivision III.—MINERALS USED IN THE MANUFACTURE OF POTTERY AND GLASS.

Of the clays used for bricks, tiles, and the various kinds of pottery and porcelain, a large and interesting collection, embracing Nos. 375 to 410, is exhibited by DR. HUNTER,

* Local Committee, *Cuttack*.

* R. W. BINGHAM, Esq.

NATIONAL ARCHIVES OF INDIA

of *Madras*. The varieties of colours are unusual, and all are worthy of careful study.

375. [9751] White kaolin from decaying Clevelandite, Bimlipatam. DR. HUNTER.

376. [9752] Do. from decaying albite, Vizianagarum.

377. [9753] Do. from decaying pegmatite, Bangalore.

378. [9754] Do. from decaying granite, Bimlipatam.

379. [9755] Do. Bangalore.

380. [9756] Do. from decaying felspar, Kercumbada.

381. [9757] Cream-coloured do. Bangalore.

382. [9758] Kaolin from Beder, near Secunderabad.

383. [9759] Lavender-coloured do., approaching Lithomarge, from near Tanjore.

384. [9760] White do. from Cuddapah.

385. [9761] Do. from railway cuttings near Cheyar Bridge, Cuddapah District.

386. [9762] Do. from Madura.

387. [9763] Cream-coloured do. from Angoomly, Nugger Division, Mysore.

388. [9764] Greenish-yellow do., Bangalore.

389. [9765] Buff-coloured do. Do.

390. [9766] Do. Yercand, Salem.

391. [9776] Fawn-coloured do. Do.

392. [9767] White pipe-clay (occurs below kaolin), Cuddapah.

393. [9768] White ball-clay, Conjevaram.

394. [9769] Do. Bangalore.

395. [9770] Ball-clay, Coopoor, near Madras.

396. [9771] Do. Awady, near Madras.

397. [9772] Do. Mount Capper, Cuddalore.

398. [9773] Silty clay (bed of river), near Cuddapah.

399. [9774] Blue clay, Bangalore.

400. [9775] Fire clay or aluminous shale, Streepermatoor.

401. [9777] Yellowish clay, Bangalore.

402. [9778] Greenish clay, Bangalore.

403. [9779] Yellowish clay, Salem.

404. [9780] Pink-coloured clay, Bangalore.

405. [9781] Soft red clay, accompanying kaolin, from Bangalore.

406. [9782] Yellow ochrey clay, Bangalore.

407. [9783] Brown potter's clay (three qualities), Madras.

408. [9784] Black clay (containing manganese), Bangalore.

409. [9785] Black clay, Madras.

410. [5053] Series of pottery clays, from Madras.

410A. [10573-5] Black and white pottery clays, North Arcot, Madras.

411. [6576] White earth, banks of Dunseerie Nuddee, Assam. R. W. BINGHAM, Esq.

412. [6574] Washed earth, banks of Nambur Nuddee, Assam. R. W. BINGHAM, Esq.

413. [6573] White earth, Seel Chitta, Assam. R. W. BINGHAM, Esq.

414. [6575] Do. unwashed, from banks of Nambur Nuddee, Assam. R. W. BINGHAM, Esq.

415. [6577] Black earth, Assam. R. W. BINGHAM, Esq.

415A. [1488] Earth from which the Amroha pottery is made. Allahabad.

416. [6714] Blue clay, Singapore. COL. COLLYER.

417. [6715] Do. Do. Do.

418. [6716] Yellow clay Do. Do.

419. [6717] Pipe clay Do. Do.

420. [6730] Clay No. 6 Hydraulic cement made therefrom. Do. Do.

421. [4166] Pipe clay, Penang.

422. [4167] Do. Do.

NATIONAL ARCHIVES OF INDIA

423. [4168] Pipe clay, Penang.

424. [2863] Chooee mutty or pipe clay, Raepore.

425. [2703] Samples of clays for brick, pottery, and china, from Bangalore, Mysore. CAPT. PUCKLE.

a Clays.
b Do.
c Do.
d Do.
e Quartz powder.
f Powdered grit.

426. [2723] Vase, ordinary native pottery, from potter's clay, intended to illustrate the lays (No. 2703), Bangalore. CAPT. PUCKLE.

427. [2724] Four vases, made of the finer clays, at the Bangalore jail and industrial school, in illustration of clays (No. 2703). These clays had not been previously used. Bangalore. CAPT. PUCKLE.

428. [6748] Tannah Mala (white clay), Malacca. CHEE YAM CHUAN.

429. [6729] Fire clay bricks, Singapore.

These bricks were manufactured at the government convict brick establishment, by native convicts from various parts of India, mostly transported to Singapore for life. The bricks are made in the slop method on a slab table, with water trough, &c. Each moulder turns out in a working day of eight hours 2,500 bricks. Eight tables can be worked daily, and the out-turn has been 500,000 per month. The cost of the establishment last year was 26,727 rupees, and the value of manufacture produced 41,526 rupees, showing a balance of profit to the government of 1,500*l.**

430. [5935] Bricks, Government works, Calcutta.

431. [5936] Do. made at Akra.

432. [4111] Fire brick, made at Avarendang, Prov. Wellesley, by J. C. THOMPSON, Manager of the Malakoff estate. The bed of clay extends for several miles along the north bank of the Pry river, and its depth has not been ascertained.

Subdivision IV.—MINERALS USED FOR PERSONAL ORNAMENTS, OR FOR MECHANICAL AND SCIENTIFIC PURPOSES.

In this subdivision but few specimens are exhibited. Agates are fairly represented. Rubies are almost entirely absent, and sapphires altogether.

433. [10272] Jasper, Banda.

434. [10271] Bloodstone, Do.

TABLE SHOWING THE VALUE OF PRECIOUS STONES EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1856–57 TO 1860–61

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED							TOTAL EXPORTED TO ALL PARTS
		UNITED KINGDOM	FRANCE	OTHER PARTS OF EUROPE	SUEZ AND ADEN	CHINA	ARABIAN AND PERSIAN GULFS	OTHER PARTS	
		Value	Value	Value	Value	Value	Value	Value	Value
		£	£	£	£	£	£	£	£
1856-57	Bengal	16,776	272	1,122	1,800	250	..	971	21,191
	Madras	8,205	70	35	..	..	..	290	8,600
	Bombay	..	13,000	..	84,908	3,546	5,195	1,784	108,433
	ALL INDIA	24,981	13,342	1,157	86,708	3,796	5,195	3,045	138,224
1857-58	Bengal	9,618	201	2,125	5,060	50	..	416	17,530
	Madras	14,950	..	..	..	..	..	134	15,084
	Bombay	22	3,000	..	61,304	4,459	6,839	2,591	78,215
	ALL INDIA	24,590	3,261	2,125	66,364	4,509	6,839	3,141	110,829
1858-59	Bengal	16,296	..	..	8,530	1,958	..	746	27,530
	Madras	9,927	1,000	..	..	69	..	536	11,528
	Bombay	12,129	..	..	66,318	8,365	1,486	397	89,195
	ALL INDIA	38,352	1,000	..	74,848	10,883	1,486	1,679	128,248
1859-60	Bengal	7,645	710	..	10,690	6,542	..	698	26,585
	Madras	2,243	470	..	..	280	..	1,947	4,940
	Bombay	18	1,800	..	90,206	15,018	3,623	644	111,309
	ALL INDIA	9,906	2,980	..	101,196	21,840	3,623	3,289	142,834
1860-61	Bengal	7,955	2,840	..	7,490	1,317	..	2,363	21,965
	Madras	1,578	115	..	..	150	..	913	2,756
	Bombay	1	600	..	108,309	9,367	9,963	787	129,027
	ALL INDIA	9,534	3,555	..	115,799	10,834	9,963	4,063	153,748

* H. A. M'NAIR, Esq., Superintendent.

NATIONAL ARCHIVES OF INDIA

435. [988] Piece of fossil wood and bamboo, Jubbulpore.

436. [10266] Petrified bamboo, Banda.

437. [10270] Bloodstone, Do.

438. [987] Piece of fossil bamboo, Jubbulpore.

439. [986] Piece of fossil wood, Do.

440. [985] Do. Do.

441. [10263] Jasper, Banda.

442. [10264] Do. reddish, Do.

443. [10265] Petrified palm tree, Do.

444. [7964] Box of pebbles, Soane River. R. W. BINGHAM, Esq.

445. [4461] Unpolished rubies, Burmah. Messrs. HALLIDAY, FOX & Co.

446. [7992] Pieces of malachite, C. India. INDIA MUSEUM.

447. [7991] Turquoise (large specimens), Thibet. Do.

448. [7990] Garnets, cut and polished. Do.

449. [2143] Turquoise, Jubbulpore.

450. [2370] Garnets, Mysore.

451. [2139] Specimen of Tombra stone, Peshawur.

452. [7989] Garnets, rough, Viziangram. INDIA MUSEUM.

453. [10278] Goree Soleymance stone, Kane River, Banda.

454. [1479] Rock crystal, Jubbulpore.

455. [5884] Do. Ulwar. Presented by H. H. the MAHARAJAH.

456. [616] Do. Vizagapatam. GOVERNMENT.

457. [4837] Large piece rock crystal, Burmah. Messrs. HALLIDAY, FOX & Co.

458. [1268] Rough agate stones, Cambay. H.H. the RAJAH OF RAJPEEPLA.

459-461. [5311-12-13] Specimens of jade, Rangoon.

462. [10268] Polished Goodurreea stone, Banda.

463. [10269] Polished shells, Do.

464. [10262] Goodurreea stone, Banda.

464A. [9276—9319] Rock formations, pebbles, &c., from the rivers of Assam.

464B. [694] Stones found in the Jhoora Hills, Kutch. H.H. the RAO.

Subdivision V.—*a.* SIMPLE BODIES, OR COMPOUNDS CONTAINING THE ALKALIES OR ALKALINE EARTHS.

Of those used principally for culinary purposes or for medicine, salt and mineral waters require special consideration.

Salt is very well represented, as the following varieties prove.

465. [6176] Scinde Kurkutch salt, 1860-61, Cuttack. Salt produced by solar evaporation.*

466. [6184] Chilka Kurkutch salt. Cuttack. Salt produced by solar evaporation.

467. [6188] Chilka Pungah salt. Do. Do. Do.

468. [6189] Khoredah Pungah salt. Do. Do. Do.

469. [6185] Balasore Pungah salt. Do. Do. Do.

470. [6181] Cuttack Pungah salt. Do. Do. Do.

471. [6195] Pungah salt. (Ghaut Narainpore). Tumlook. Do.

472. [6200] Ghaut Pooreeghattah salt, 1267 S. S. Hidgelee agency. Boiled salt.

473. [6174] Ghaut Russoolpore salt. Do. Do. Do.

474. [6173] Ghaut Ramnuggur salt. Do. Do. Do.

475. [6197] Ghaut Kalinuggur salt. Do. Do. Do.

476. [6192] Ghaut Kissennuggur salt. Do. Do. Do.

477. [6186] Salt, Narainpore. Manufactured under excise during season 1860-61, at the factory of Messrs. Collins & Hills, at Narainpore, within the limits of the Barripore Salt Chokey Superintendency, Zillah 24-Pergunnahs, Bengal.

* Contributed by GOVERNMENT.

NATIONAL ARCHIVES OF INDIA

478. [6178] Do. Barripore. Manufactured under excise during season 1860–61, by Baboo Mohendronarain Dutt, in Lot No. 122, within the limits of the Barripore Superintendency, Zillah 24-Pergunnahs.

479. [6198] Do. Saugor Island. Manufactured under excise during season 1860–61, at Saugor Island, by H. Frazer, Esq., within the limits of the Barripore Superintendency, Zillah 24-Pergunnahs.

480. [6175] Pungah salt, Southern Arungs, manufacture of 1267. Chittagong.

481. [6196] Pungah salt, Nezampore Arungs, manufacture of 1267. Do.

482. [6179] Salt, Midnapore.

483. [6183] Common salt, Pungah salt, Cuttack.

484. [6177] Gravel do., Kurkutch. Do.

Two specimens are sent, furnished by W. J. MONEY, Esq., Salt Agent of Pooree. The first, called *Pungah* salt, is obtained by boiling to a residuum highly concentrated brine. The second sample is the *Kurkutch*, or gravel salt. As the word signifies, it is produced by the aid of solar evaporation only, from sea-water. The water is introduced into small beds prepared with a smooth bottom of clay, rightly depressed in the ground, and surrounded by a slight ridge of earth. A few hours' exposure in the burning sun of March and the two following months, is sufficient to evaporate the water in these beds, which deposits the salt it held in solution. A fresh supply is then let in, and the process of total or only partial evaporation is continued, till the bottom of the beds is covered with a layer of this salt, more or less thick, which is then scraped up and is the salt of the sample.

Both these kinds of salt are produced all along the seaboard of the province, from February to June, and under what is practically a Government monopoly. The last season's manufacture amounted to 50,000 tons of the one, and 44,000 tons of the other. The production is considered handsomely to remunerate the petty contractors, who engage with Government for its supply at 10 annas and 4 annas per maund for each kind respectively, which is equivalent to 35*s.* 5*d.* per ton for the one, and 14*s.* 5*d.* per ton for the other, in English money and measure. To the Pungah must be added about 50 per cent., to the Kurkutch about 25 per cent., for expenses of superintendence &c. To the more extended manufacture of the white salt, the present insalubrity of the manufacturing localities and the consequent difficulty of procuring labour, as well as the insufficiency of the fuel supply, are obstacles. The coarser kind may be manufactured *ad infinitum*, but is nowhere appreciated so much as locally, that is, in the district, as, not being 'cooked' like the Pungah, it is more acceptable to the scrupulous caste prejudices of the Oryahs. The bulk of both kinds is exported to Calcutta. The local retail price at Cuttack in the shops of the bazaar for Kurkutch is 6*s.* 3*d.* per maund of 100 English lbs. Pungah is sold at the Government depôts at 8*s.* 3*d.* per maund.*

485. [6568] Common salt, Cha. Ramree.

Used with food by the inhabitants; price, 1 rupee per maund; annual production, 100,000 maunds, but could be extended to 500,000 if necessary. The surplus salt not required for consumption in the province is exported by Government to Chittagong. The salt is manufactured by boiling the salt sea-water after it has been allowed to stand for some days on land prepared to receive it.*

486. [6187] Salt in lumps on wood, Isadaing. Ramree.

Used with food by the inhabitants; price, 1 rupee per maund. The quantity annually manufactured is 400 maunds.†

487. [6182] Salt, Racee Nimuck. Lucknow.

This is an impure chloride of sodium. Formerly the greater part of the salt consumed by natives of Oude was made in this province; now it comes from other provinces, and this is the only kind made at present in Oude.‡

488. [10259] Do. From salt mines of the Shahpore district.

There are five salt mines worked by Government in the salt range; one at Kalabagh, across the Indus, and several in the Kohat district, and the supply from these sources may be said to be inexhaustible. An excise duty of 3 rupees per maund of 80 lbs. is now charged upon all salt sold, the rate having been lately increased (two years ago it was but 2 rupees); and the revenue derived from this source amounted to upwards of 280,000*l.* The salt mines are the means of supplying the traders of the Punjab with a kind of paper currency. By payment of the regulated price at any of the Punjab treasuries, a warrant for the delivery of so much salt at the mines may be obtained; these documents are transferable, and pass from hand to hand like bank-notes.§

489. [9824] Crystals of common salt from old salt works, Patree.

490. [9825] Do. Do. Do.

491. [10259] Rock salt from the salt range, Punjab.

---

* Local Committee, *Cuttack*, which also supplies the following note:—

"This committee, in specifying the local prices of articles, do so with this explanation, that it is impossible to give any rates which are average ones, or which are in any degree equally applicable all over the district. Where any particular article is produced, there it is cheapest; and the cost and difficulty of transport, and the want of competition, are such, that a distance of 50 miles between the place of production and the central market makes a difference in price of 50 or 100 per cent. in the rates at which some articles are bought and then sold. This is especially the case with the oil seeds of the province, cotton, &c. Under these circumstances it would have been impossible for this committee to have stated any average rates. The prices which have been generally mentioned in the catalogue are the local, that is, the Cuttack bazaar retail prices. It may be as well to state, that all articles coming from Sumbulpore or elsewhere, by river carriage, are cheapest in the months of July and August, when the rivers first admit of navigation, and that between July and January the rates for the same articles may vary as much as 50 per cent."

* Local Committee, *Akyab*.
† Local Committee, *Akyab*.
‡ Central Committee, *Oude*.
§ Central Committee, *Lahore*.

NATURAL RESOURCES OF INDIA

492. [4786] Salt, Burmah. Messrs. HALLIDAY, FOX & Co.

493. [1849] Salt, No. 4416.

494. [9826] Crystals of common salt found in salt-pits, Futtehpore.

495. [2175] Black salt, Padah noon, Calcutta.

496. [2176] Do. Do. Do.

MINERAL WATERS.

497. [2103] Mineral water, Deoree, Jubbulpore.

498. [2104] Do. Do. Do.

499. [2105] Do. Kosunghat. Do.

500. [2106] Do. Do. Do.

501. [2119] Do. Surar. Do.

502. [2120] Do. Do. Do.

503. [2107] Mineral water, Koodra, Jubbulpore.

504. [2108] Do. Do. Do.

These four springs produce a good deal of water; they bubble up, and are supposed to contain no sulphur; the natives do not attribute to them any beneficial effect in disease, but after recovery from sickness drink the waters, as they are supposed to create an appetite, and thereby give strength.

505. [2121] Mineral water, Sonachur.

506. [2122] Do. Do.

Does not bubble up, but produces a good deal of water; the villagers drink it daily. Comes out of black earth.

507. [2109] Mineral water, Kooslee.

508. [2110] Do. Do.

509. [2111] Do. Churgaon.

510. [2112] Do. Do.

511. [2113] Do. Bilba.

512. [2114] Do. Do.

513. [2115] Do. Bumhee Boomba.

514. [2116] Do. Do.

There is very little water in the last-named spring; i bubbles up mixed with sand. It contains no sulphur, and is not supposed to be beneficial in disease.

515. [2117] Mineral water, Nugur Moha.

516. [2118] Do. Do.

Very little water; does not bubble up; contains no sulphur. Dries up in hot weather.

517. [2123] Mineral water. Artesian well near Jubbulpore.

518. [2124] Do. Do. Do.

A chalybeate used as a tonic by convalescents in fever cases.

519–20. [5718–19] Water from mineral springs from the Singphoo country, Khouang, Assam. H. L. JENKINS, Esq.

As sulphur and borax belong to the same subdivision as the mineral waters, they are inserted. The specimens of sulphur are very few.

521. [1049] Sulphur from the mountains of Beloochistan.

522. [1128] Do. from mines near Shoruns, Beloochistan.

523. [1848] Do. from salt range, Punjab.

524. [2300] Do. from Rangoon. Messrs. HALLIDAY, FOX & Co.

BORAX OR BIBORATE OF SODA.

Sohaga, or *Borax*, is also called Tincal. It is obtained in large quantities in the valley of Puga, in Ladakh, and in Thibet; it is collected on the borders of the lakes as the water dries up, then smeared with fat to prevent loss by evaporation, and transported across the Himalayas on the backs of sheep and goats; refined at Umritsur and Lahore by washing with lime water. It is employed by the natives as a tonic for loss of appetite; also as a deobstruent and diuretic in ascites; and also to promote labour. It is used in the arts to clean metals before soldering, to form a glaze on earthenware, and in the preparation of varnishes. It is employed as a chemical flux in experiments with the blowpipe. It is in composition a biborate of soda. Price of raw borax, 4*d.* per lb.; of refined borax, 6*d.* per lb.*

525. [1793] Sohaga or tincal, Umballah.

526. [9834] Crystals of borax, Thibet.

527. [1794] Sohaga, Umballah.

528. [1802] Do. Thibet.

529. [1803] Do. Do.

530. [9835] Crystals of native borax, Thibet.

531. [10140] Borax, Calcutta. KANNY LOLL DEY.

b. Earthy and Semi-crystalline Minerals.

Minerals useful for grinding and polishing abound in many parts of India. Although its grindstones and honestones are

* Note by DR. BROWN, Lahore.

NATIONAL ARCHIVES OF INDIA

as yet but little known, its corundum is attracting attention. Several of the specimens are beautifully crystallized.

532. [9814] Corundum stone, Chittledroog, Mysore.

533. [9815] Corundum, Salem.

534. [6505] Emery, Moonghyr.

535. [9816] Corundum.

536. [7978] Do. Mysore.

537. [9817] Do.

538. [9818] Red corundum.

539. [9819] Corundum stone.

540. [9820] Corundum cake, made of stick lac and corundum powder, as used by jewellers.

541. [9226] Honestones, North Arcot.

542. [9364] Twelve rough honestones.

Of LITHOGRAPHIC STONES there are only the specimens exhibited under.

543. [9823] Lithographic stones. R. W. BINGHAM, Esq.

MR. BINGHAM says: "I had stones for lithographic purposes made from the grey limestone, and it was used in the office of the Surveyor-General. The first stone was used in the press of Shah Kubeerooddeen Ahmed of Sasseram; it answered admirably for the purpose, but the stone must be freshly quarried or it chips, as after exposure to the atmosphere it grows intensely hard, and could then only be sawn into shape. Outside stone of limited sizes can only be obtained, owing to the ages of débris and decay which cover the main strata, but after quarrying some feet into the living rock, I feel satisfied from observation that lithographic stones of any size can be obtained."

PLUMBAGO, graphite, or black lead, is found in various parts of India. A deposit of some extent exists at Trevandrum, near Travancore. The following samples are exhibited:

544. [6357] Plumbago, Malacca. HON. CAPT. BURN.

544A. [ ] Plumbago, Burmah. HALLIDAY FOX & Co.

545. [617] Do. Vizagapatam. H. H. the RAJAH.

546. [10260] Do. Goorgaon. DR. THORNTON.

This specimen is taken from a plumbago mine, discovered by Dr. W. J. Thornton, Civil Assistant Surgeon, Goorgaon, in October 1861. It is found in masses of variable sizes, and in general quite detached; though, in some cases, the rock all round is full of plumbago mixed with finely divided micaceous particles. Provision has been made in the budget of 1862-63 to admit of farther enquiries and examination of the deposits being carried on.*

547. [7232] Plumbago, Travancore. INDIA MUSEUM.

548. [1583] Plumbago (cake), Umritsur.

549. [4274] Plumbago brick, Darjeeling. DR. CAMPBELL.

Used to make ink with rice-water.

Of earthy and other minerals used as pigments or for staining, dyeing, and colouring, there are some few illustrations.

550. [10157] Geroo, from Rohtass Spur. R. W. BINGHAM, Esq.

551. [2849] Geroo, from Raepore.

552. [10160] Kirimchee or Geroo, Rohtass Spur. R. W. BINGHAM, Esq.

553. [1822] Multani mitt, Mooltan.

554. [6392] Yellow ochre, Malacca. CHEE YAM CHUAN.

Belonging to the same class and subdivision are various minerals used in manufacture, such as alum schist, fuller's earth, French chalk, &c.

554A. [693] Alum schist. H. H. the RAO of KUTCH.

555. [7977] Fuller's earth, Chittledroog, Mysore.

556. [9836] Do. Scinde.

Subdivision VI.—SOILS AND MINERAL MANURES.

Of the latter there are none exhibited. But of the former, a portion has been selected from the large collection made by the Messrs. DE SCHLAGINTWEIT, and since then submitted to analysis. The accompanying Table (pp. 24-6) will convey useful information† to persons interested in agriculture. The soils which form a portion of the present Exhibition have been transferred from the India Museum.

---

* Central Committee, *Lahore.*

† A complete report on these and other Indian soils has been prepared for separate publication.

NATIONAL ARCHIVES OF INDIA

TERRITORY &c.	LOCALITY	REMARKS	COMPOSITION PER CENT.													Number
			Water at 212° F.	Water above 212° and organic matter	Silica free and combined	Alumina	Peroxide of iron	Lime as carbonate	Lime as sulphate	Lime in other forms	Magnesia	Potash	Sodium as chloride	Soda in other forms	Phosphoric acid	
ALLUVIAL SOILS																
GANGES RIVER SYSTEM																
Bundelkund (14)	Bomori, 93 miles north-west from Saugur	Light brown with much silex. Extends over a large surface. Good, but stony	1·082	1·247	84·000	9·180	1·350	trace	0·036	1·405	0·100	0·614	0·023	0·590	0·041	1
Oude (13)	Cawnpore	Drab-coloured, micaceous. Cultivated, not manured	1·370	0·900	79·978	9·600	3·060	0·909	0·097	0·441	0·129	1·790	0·037	1·131	0·107	2
Oude (19)	Lucknow	'Very fertile soil'	—	2·400	28·290	2·870	3·270	59·550	trace	3·057	0·270	0·193	trace	0·050	trace	3
North-Western Provinces (31)	Agra, near the military cantonments	Subsoil taken 16 feet below surface. Light grey with tinge of yellow. Much finely-divided silex	—	3·725	68·400	8·827	3·657	18·727	0·037	0·493	1·181	0·568	0·048	0·037	0·110	4
North-Western Provinces (33)	Agra, near the military cantonments	Very light grey, with but few pebbles. Subsoil taken 32½ feet below surface	—	3·720	81·177	5·109	3·778	4·964	0·051	none	0·574*	0·422	0·079	0·155	0·181	5
North-Western Provinces (32)	Agra, near the military cantonments	Yellowish, lumpy, containing much fine sand. Subsoil 44 feet below surface	—	4·325	67·742	6·462	4·334	14·460	trace	1·582	0·660	0·558	trace	0·079	0·289	6
Bahar (44)	Nandlalpur, 3 miles east of Monghyr	A red soil, good, extensively cultivated, and not manured	6·363	0·613	69·032	12·810	8·670	trace	0·036	0·261	0·390	1·500	0·041	0·138	0·043	7
Bahar (49)	Gaya, 55 miles south of Patna	Light brown soil, very fine, not impalpable. Good soil, very extensively cultivated	3·470	0·960	69·860	14·210	9·310	0·079	0·013	0·253	0·290	0·550	0·053	none	0·153	8
Bengal (39)	Buksar, on right bank of Ganges	Drab-coloured, micaceous, very finely divided. Cultivated, but not manured	3·170	0·370	72·842	13·560	3·770	2·727	0·005	2·401	0·240	0·445	0·051	0·582	0·121	9
Bengal (42)	Rajpur, 3 miles east of Bhagálpur	Light brown, almost impalpable. Good soil, extending over a large surface. Cultivated, but not manured	1·470	1·130	78·325	9·100	5·410	0·670	0·031	0·195	0·400	1·570	0·041	1·162	0·088	10
Bengal (45)	Bhagálpur	Snuff-coloured soil, with much lumpy carbonate of lime and pebble. Good soil, extensively cultivated	3·210	1·520	61·000	10·360	2·710	17·045	0·010	1·781	0·772	0·933	0·020	0·392	0·107	11
Bengal (52)	Khanjarpur factory, near Bhagálpur	Good indigo soil, not manured	1·650	5·216	55·194	10·683	3·700	17·825	0·018	3·700	1·146	0·800	0·014	1·100	0·095	12
Bengal (54)	Bhagálpur Do.	do.	1·[illegible]	4·700	57·100	10·800	4·000	16·043	0·012	3·446	1·250	0·832	none	1·012	0·122	13
Bengal (26)	Calcutta, from the bottom of river Hughly	Drab-coloured micaceous soil, almost impalpable	2·7[illegible]	1·950	66·000	15·690	8·640	0·680	0·029	0·414	0·871	2·020	0·106	0·944	0·102	14
BRAHMAPUTRA RIVER SYSTEM																
Assam (11)	Debrugurh, neighbourhood of	A peculiar micaceous soil of a red colour. Used for tea cultivation	5·700	0·020	65·046	16·550	7·850	trace	0·002	2·530	0·740	0·820	0·022	0·758	0·115	15
Assam (12)	Debrugurh	Drab-coloured, approaching white. Only occasionally cultivated, not manured	3·330	0·130	68·700	17·470	4·530	0·014	0·005	0·881	1·450	1·816	0·029	1·795	0·042	16
Assam (1)	Debru, east of Debrugurh	A fine micaceous soil, of a light reddish-brown colour. A regularly inundated but indifferent soil	3·930	1·440	69·660	12·830	9·660	0·091	0·010	0·173	0·500	0·700	0·033	0·043	0·063	17
Assam (35)	Machuli island in the Brahmaputra. Near Salamara village	Stiff drab-coloured soil, approaching whiteness. Cultivated	5·830	3·500	55·300	29·630	3·570	trace	0·007	—	1·210	0·620	0·025	0·167	0·058	18

* Carbonate of magnesia, 0·107.

NATIONAL ARCHIVES OF INDIA

ALLUVIAL SOILS—*continued*																		
BRAHMAPUTRA RIVER SYSTEM																		
Eastern Bengal (10)	Jairampur, left side of Brahmaputra	A ferruginous clay. Cultivated and inundated	6·750	1·950	62·505	22·240	5·230	trace	0·034	none	0·240	0·664	0·053	0·513	0·015	19
Eastern Bengal (25)	Jumalpur, in most northern part of Delta of Brahmaputra	Yellowish brown, with much fine silex. Cultivated, but not manured. Inundated at the time the sample was obtained	4·700	1·780	71·350	14·010	7·040	0·144	0·009	—	0·232	0·450	0·041	0·253	0·125	20
Eastern Bengal (8)	Rajaganj, on the Surma	Very light brown, somewhat lumpy. Cultivated and inundated	2·930	1·730	72·000	16·270	3·460	trace	0·007	0·883	1·240	0·786	0·016	0·686	0·082	21
Eastern Bengal (9)	Bairab bazaar, one mile north of, near the junction of the Surma and Brahmaputra	Cultivated, not manured	1·15	3·892	60·443	15·835	12·662	trace	0·414	2·160	0·295	1·830	0·079	1·022	0·250	22
Eastern Bengal (7)	Koralea, 5 miles east of, near the Megna	Drab-coloured with reddish tint. Regularly inundated and cultivated eight months of the year	4·460	1·190	67·000	17·440	4·890	trace	0·088	1·404	1·430	0·598	0·020	1·656	0·132	23
INDUS RIVER SYSTEM																		
Punjab (2)	Near Rorki	Whitish soil called 'pakka zamin' (hard soil,) obtained just above the limit of the regular perennial overflow of the Indus.	2·900	6·593	52·950	15·347	8·153	8·557	0·022	1·045	1·388	1·220	0·038	0·976	0·025	24
Punjab (38)	Near Raulpindi Sindh Sager Duab	Drab-coloured, dense soil. Ordinary cultivated soil	4·430	2·840	59·500	17·890	5·110	1·164	0·069	6·778	0·720	1·038	0·074	0·404	0·107	25
Punjab (22)	Numbal. Sindh Sager Duab	Reddish drab, distinctly calcareous. Cultivated, but not manured	3·940	1·010	50·490	11·890	7·420	16·660	0·839	3·915	1·218	1·102	0·315	0·943	0·069	26
Punjab (34)	Kot Isa Shah, in the Jech Duab between the Jhilam and Chinab	Cultivated, but not manured	1·750	2·410	66·640	12·260	6·310	9·810	trace	—	1·330	0·520	trace	0·213	0·043	27
Punjab (37)	Lahor, between the Ravi and the Sutlej	A light drab-coloured, impalpable soil. Carefully irrigated and cultivated with rice. The best soil near Lahor	3·930	0·930	63·800	12·660	10·000	4·000	0·041	1·033	1·910	1·029	0·036	0·722	0·132	28
Punjab (4)	Lahor	Light drab-coloured, almost impalpable. Subsoil to (37); 5 feet below the surface of a rice field	2·160	0·500	66·337	14·630	4·100	5·459	0·051	1·590	2·010	1·820	0·033	1·313	0·097	29
Punjab (23)	Lahor Do.	Light drab-coloured subsoil from 10 feet below the surface. Very good siliceous soil	1·260	3·700	65·800	12·814	6·280	4·690	0·155	—	3·070	1·244	0·080	0·900	0·092	30
Punjab (24)	Between Rorki and Adolsha in the Bari Duab	Whitish, retentive of moisture. Cultivated, but not manured. Occasionally inundated by the Indus	1·800	7·860	49·783	15·450	8·600	9·160	0·209	1·466	3·235	1·287	0·026	1·130	0·064	31
Punjab (5)	Serdarpur in the Bari Duab, between the Ravi and the Sutlej	Cultivated soil	3·930	0·930	63·800	12·660	10·000	4·000	0·041	1·033	1·910	1·029	0·036	0·722	0·132	32
Punjab (6)	Multan, Bari Duab	A light drab-colour. Almost impalpable. Covered with grass	1·860	1·520	70·000	12·980	8·010	1·637	0·070	1·204	0·443	2·240	0·055	0·801	0·117	33
Punjab (3)	Multan, in the Bari Duab	Light drab subsoil, 3 feet below surface	1·090	1·370	68·670	14·150	6·340	3·182	0·090	0·661	0·590	2·136	0·078	1·232	0·109	34
Punjab (20)	Naushera, in Bhawulpore	Stone-coloured calcareous subsoil, 9 ft. 9 in. below the surface	2·120	4·080	57·900	15·000	3·500	9·620	0·452	3·130	2·300	0·836	0·262	1·000	0·140	35
Punjab (21)	Ahmedpur, in Bhawulpore	Whitish, somewhat calcareous. Cultivated	1·300	3·150	63·800	12·300	6·250	5·145	0·051	5·198	1·290	1·022	0·036	0·862	0·063	36
Sindh (18)	Larkhana	Good cultivated soil	—	2·300	54·940	15·850	14·720	9·563	trace	none	0·560	1·103	trace	0·620	0·060	37
RIVER OF CENTRAL INDIA																		
Orissa (43)	Puske Par, near the Godaveri, to the north of Rajamundri	Grey siliceous soil, with very slight retentiveness for moisture. It is the predominant soil	0·235	1·183	97·298	0·604	0·147	trace	trace	0·142	0·091	0·060	0·023	0·015	0·109	38
BLACK COTTON SOILS																		
Gujrat (27)	Purderi, north-west of Rajkot	Coarse pebbly soil of pigeon-grey colour. A good soil. Cultivated, but not manured	4·323	0·117	74·202	8·000	3·200	5·545	0·022	1·396	1·730	0·594	0·065	0·749	0·127	39
Gujrat (28)	Between Dassa and Daruka	Dark grey, very tenacious. Good ordinary soil, generally cultivated	7·960	1·870	36·980	16·410	9·340	22·600	0·013	1·210	1·020	0·710	0·065	0·236	0·025	40
Gujrat (30)	Near Kotra	Fine specimen of cotton soil	5·767	6·194	19·588	12·089	19·860	0·454	0·374	4·750	0·804	0·287	0·033	0·383	0·151	41

NATIONAL ARCHIVES OF INDIA

TERRITORY &c.	LOCALITY	REMARKS	COMPOSITION PER CENT.														Number
			Water at 212° F.	Water above 212°, and organic matter	Silica, free and combined	Alumina	Peroxide of iron	Lime as carbonate	Lime as sulphate	Lime in other forms	Magnesia	Potash	Sodium as chloride	Soda in other forms	Phosphoric acid		
BLACK COTTON SOILS—*continued*																	
Malwa (15)	Between Panagurh and Jubbulpur	A brown lumpy soil, with much silex. Good black cotton soil, of great extent. Cultivated, but not manured	10·700	none	61·560	16·660	6·000	0·454	0·121	1·377	0·720	0·573	0·053	1·719	0·166		42
Malwa (36)	Surki, south of Sauger	Dark grey, coarse and powdery, with few fibres. Good black cotton soil. Cultivated, but not manured	7·500	2·560	68·820	8·867	12·629	trace	0·061	1·824	0·447	0·134	0·066	0·087	0·663		43
Berar (16)	Near Shironcha	Good black cotton soil, extensively cultivated	3·459	3·099	76·510	6·194	6·885	0·795	0·382	0·929	0·492	0·744	0·058	0·273	0·080		44
Dekhan (50)	Navi Ghat, between Rematpur and Pusesauli, near the Krishna	Deep brown, with few visible particles of chalk, and but little silex. Good black cotton soil. Cultivated, but not manured	20·000	0·330	43·100	21·500	10·000	2·000	0·004	0·240	0·570	0·695	0·048	1·700	0·025		45
Dekhan (53)	Khamlapur, on the right side of the Krishna	Deep brown, with some coarse silex. Good black cotton soil. Cultivated, but not manured	17·000	0·460	41·730	19·930	11·400	2·228	0·024	4·353	0·143	0·813	0·053	0·779	0·038		46
Mysur (29)	Bellari	Deep slate colour, with much silex and visible chalk particles. Good black cotton soil. Cultivated, not manured	12·000	0·260	57·330	13·330	5·230	9·231	0·057	1·154	0·290	0·332	0·055	0·774	0·101		47
SOILS DERIVED FROM ROCKS *IN SITU*																	
Nilgiris (47)	Paikara, west of Utakamand	Bright ochreous soil, with great affinity for water. 'A very good specimen of laterite'	5·070	10·080	31·450	14·910	36·823	0·090	0·017	0·448	0·195	0·760	0·016	0·360	0·005		48
Nilgiris (48)	Kunnur, SSE. from Utakamand	Bright ochreous soil, with great affinity for moisture. 'Laterite very frequently met with'	7·610	10·190	35·817	27·986	17·265	—	0·014	0·024	0·036	0·660	0·020	0·120	0·007		49
Orissa (51)	Hills near Rajamandri	Light reddish brown, very lumpy, as if burnt. Highly siliceous. 'Finely grained laterite, extensively cultivated, but not manured'	2·240	0·826	86·183	5·807	2·659	trace	0·037	0·932	0·034	0·450	0·018	0·110	0·436		50
Berar (17)	Deolapur, north of Nagpur	'Sandy soil of decomposed granite. Cultivated, but not manured'	1·012	2·507	76·083	10·989	5·481	trace	0·398	1·104	0·461	1·444	0·024	0·505	0·102		51
SOILS OF MIXED ORIGIN																	
Bundelkund (46)	Teri, 72 miles north-west from Sauger	'Good soil for wheat cultivation: covers a large area'	2·860	0·140	81·430	11·930	1·400	0·454	0·002	0·013	0·308	0·578	0·033	0·383	0·023		52
Malwa (40)	Nursinghpur	A deep pigeon-grey soil, with much coarse silex. Rich in peroxide of iron: it contains no alumina. 'Ordinary soil capable of cultivation'	12·000	0·530	54·730	trace	25·000	2·454	0·004	3·286	0·960	0·412	0·031	0·302	0·066		53
Malwa (41)	Gurchamer, north of Nursinghpur	An olive-brown soil: gritty from silex. 'A good cotton soil, not manured'	16·000	2·000	41·930	23·292	13·438	0·454	0·005	1·194	1·440	0·720	0·055	0·529	0·008		54

NATIONAL ARCHIVES OF INDIA

CLASS II.

CHEMICAL AND PHARMACEUTICAL PROCESSES AND PRODUCTS GENERALLY.

SECTION A.—CHEMICAL SUBSTANCES AND PRODUCTS.

Division I.—CHEMICAL SUBSTANCES USED IN MANUFACTURE:—ALKALIES, EARTHS, AND THEIR COMPOUNDS.

IMPURE CARBONATE OF SODA.

This occurs as an efflorescence in some part or other in almost every district in India. It is largely employed in the manufacture of native soap. Specimens from various localities, as indicated below, have been forwarded.

557. [1895] Impure carbonate of soda, Calcutta. KANNY LOLL DEY.

558. [9831] Crude carbonate of soda, Madras.

558A. [823] Subcarbonate of soda, Shikarpoor.

559. [1935] Crystals of carbonate of soda. C. B. WOOD, Esq.

560. [10256] Sajji, from the common Sajji mutti (soda earth), Mooltan.

561. [10257] Do. Jung district.

562. [10258] Do. Do.

SALTPETRE.

Bengal supplies the largest portion of this important salt sent into the European market. The Punjab is said to possess large resources in this respect, which have still to be developed. The subjoined Table indicates the extent and value of the Indian export trade in saltpetre from the various Presidencies, whilst the samples exhibited embrace representatives from a number of districts. The notes entered below the various samples have been furnished by the different exhibitors or committees, and although chiefly of local application, are possessed of considerable general interest.

563. [6180] Nitre or saltpetre (black), from Cuttack.

564. [6193] Do. (white) Do.

Nitre is known locally as 'Khai jabkhai.' The black specimen is obtained by a process of solution and filtration of the salt which is found effloresced on old mud walls. The white is the same salt more carefully prepared for the most part in the hill tracts, from a similar efflorescence found in the cold months on the base of cow-house walls, and there generated, it is to be supposed, by the oxydation of the ammonia thrown off from the urine of the cattle. Neither kind is manufactured extensively enough for commercial purposes; still the local manufacture furnishes a good deal of the saltpetre, if not the bulk of it, used in native gunpowder for shooting and for fireworks.*

565. [10164] Saltpetre, first quality, from Ulwar. Presented by H. H. the MAHARAJAH of ULWAR.

566. [10165] Do. second quality. Do.

567. [1947] Saltpetre from Jhansi.

568. [6194] Saltpetre (Shorah), Lucknow.

For gunpowder and frigorific mixtures; 2 seers per rupee; made in various parts of Oude. This is purified nitre, and is the only kind used for making gunpowder.†

569. [9827] Saltpetre, Nellore.

569A. [692] Saltpetre, Kutch. H. H. the RAO.

* Local Committee, *Cuttack*.
† Central Committee, *Lucknow*.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF SALTPETRE EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61

Years	Whence Exported	Countries whither exported: United Kingdom Quantity	United Kingdom Value	France Quantity	France Value	Other Parts of Europe Quantity	Other Parts of Europe Value	America Quantity	America Value	China Quantity	China Value	Arabian and Persian Gulfs Quantity	Arabian and Persian Gulfs Value	Other Parts Quantity	Other Parts Value	Total Exported to all Parts Quantity	Total Exported to all Parts tons	Total Exported to all Parts Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1850–51	Bengal	260,893	202,489	49,031	38,392	11,529	9,027	105,961	82,954	32,282	25,278	..	..	4,044	3,166	463,740	23,187	361,306
	Madras	16,759	11,345	249	167	..	..	..	..	..	..	8	6	423	294	17,439	872	11,812
	Bombay	4,886	2,228	114	91	..	..	..	..	..	..	84	47	253	148	5,337	267	2,514
	All India	282,538	216,062	49,394	38,650	11,529	9,027	105,961	82,954	32,282	25,278	92	53	4,680	3,608	486,516	24,326	375,632
1851–52	Bengal	224,548	175,903	21,046	16,476	9,707	7,600	241,787	192,283	19,573	15,322	..	..	2,280	1,785	518,941	25,947	409,369
	Madras	23,267	15,641	541	364	..	..	..	..	..	..	3	2	805	554	24,616	1,231	16,561
	Bombay	6,855	5,304	..	..	..	..	..	..	..	..	98	78	115	67	7,068	353	5,449
	All India	254,670	196,848	21,587	16,840	9,707	7,600	241,787	192,283	19,573	15,322	101	80	3,200	2,406	550,625	27,531	431,379
1852–53	Bengal	318,064	245,169	42,282	33,089	8,518	6,736	148,788	116,043	31,013	24,284	..	..	7,855	6,140	556,510	27,325	431,461
	Madras	11,313	7,601	4,665	3,202	..	..	..	..	..	..	18	11	524	314	16,520	826	11,128
	Bombay	10,067	6,017	..	..	..	..	..	..	..	..	11	9	384	190	10,462	523	6,216
	All India	339,444	258,787	46,947	36,291	8,518	6,736	148,788	116,043	31,013	24,284	29	20	8,763	6,644	583,492	28,674	448,805
1853–54	Bengal	357,057	279,449	43,647	18,316	336	263	220,679	172,705	28,742	22,527	..	..	10,146	7,941	660,607	33,030	501,201
	Madras	19,042	12,807	3,049	2,080	..	..	..	..	..	..	19	33	705	476	22,815	1,141	15,396
	Bombay	17,844	11,568	13	11	..	..	..	..	..	..	192	234	294	162	18,343	917	11,975
	All India	393,943	303,824	46,709	20,407	336	263	220,679	172,705	28,742	22,527	211	267	11,145	8,579	701,765	35,088	528,572
1854–55	Bengal	240,151	187,095	57,555	45,045	10,693	8,370	216,308	170,229	44,405	34,983	..	..	15,317	11,992	584,429	29,221	457,714
	Madras	12,850	8,649	723	486	..	..	..	..	..	..	17	12	704	473	14,294	715	9,620
	Bombay	26,370	15,257	66	40	..	..	..	..	3,342	2,018	68	28	176	115	30,022	1,501	17,458
	All India	279,371	211,001	58,344	45,571	10,693	8,370	216,308	170,229	47,747	37,001	85	40	16,197	12,580	628,745	31,437	484,792
1855–56	Bengal	355,204	278,013	30,765	24,073	..	..	145,674	114,095	5,503	4,308	..	..	3,835	3,000	540,981	27,049	423,489
	Madras	10,378	7,211	..	..	..	..	..	..	..	..	..	..	214	144	10,592	529	7,355
	Bombay	31,668	18,392	..	..	..	..	..	..	..	..	71	50	179	104	31,918	1,596	18,546
	All India	397,250	303,616	30,765	24,073	..	..	145,674	114,095	5,503	4,308	71	50	4,228	3,248	583,491	29,174	449,390
1856–57	Bengal	266,250	226,833	82,337	70,102	10,449	8,864	249,732	212,525	18,276	15,472	..	..	7,668	6,528	634,712	31,736	540,324
	Madras	13,149	8,849	..	..	196	132	..	..	..	..	12	8	607	414	13,964	698	9,403
	Bombay	44,100	25,958	950	570	..	..	..	..	..	..	46	33	..	..	4,519	226	26,619
	All India	323,499	261,640	83,287	70,672	10,645	8,996	249,732	212,525	18,276	15,472	58	41	8,275	6,942	653,195	32,660	576,346
1857–58	Bengal	246,393	192,837	28,430	22,259	6,612	5,175	139,629	109,326	24,935	19,515	..	..	5,641	4,186	451,640	22,582	353,298
	Madras	8,844	5,943	138	93	203	137	..	..	..	..	..	..	174	120	9,359	468	6,293
	Bombay	52,006	27,923	4,587	2,459	508	240	287	172	..	..	..	..	2	2	57,390	2,869	30,796
	All India	307,243	226,703	33,155	24,811	7,323	5,552	139,916	109,498	24,935	19,515	..	..	5,817	4,308	518,389	25,919	390,387
1858–59	Bengal	353,402	276,597	32,171	25,185	3,732	2,920	154,741	121,109	28,190	22,090	..	..	13,311	9,786	585,547	29,277	457,687
	Madras	13,193	8,860	4,830	3,246	..	..	..	..	..	..	..	..	84	56	18,107	905	12,162
	Bombay	107,486	55,927	2,443	1,225	..	..	..	..	1,177	683	..	..	636	412	111,742	5,587	58,247
	All India	474,081	341,384	39,444	29,656	3,732	2,920	154,741	121,109	29,367	22,773	..	..	14,031	10,254	715,396	35,769	528,096
1859–60	Bengal	325,873	281,456	4,096	3,206	349	273	147,704	115,599	32,771	25,807	..	..	5,464	4,446	516,257	25,813	430,587
	Madras	2,111	1,419	3,287	2,209	..	..	..	..	..	..	..	..	34	28	5,432	274	3,656
	Bombay	88,349	45,962	..	..	..	..	605	575	292	184	39	28	296	234	89,581	4,479	46,983
	All India	416,333	328,837	7,383	5,415	349	273	148,309	116,174	33,063	25,991	39	28	5,794	4,708	611,270	30,566	481,226
1860–61	Bengal	216,956	293,581	..	..	4,991	6,795	168,326	227,739	44,829	60,972	..	..	3,380	4,380	438,482	21,974	593,467
	Madras	4,376	3,027	..	..	..	..	..	..	..	..	..	..	16	13	4,392	220	3,040
	Bombay	83,786	64,152	..	..	..	..	1,336	1,111	..	..	..	..	2	2	85,124	4,256	65,265
	All India	305,118	360,760	..	..	4,991	6,795	169,662	228,850	44,829	60,972	..	..	3,398	4,395	527,998	26,450	661,772

NATIONAL ARCHIVES OF INDIA

570. [9828] Pure nitre, gunpowder factory, Madras.

571. [4785] Saltpetre, Burmah. Messrs. HALLIDAY, FOX & Co.

572. [9829] Do. purified in the laboratory, Calcutta.

573. [10586] Do. Salem. Messrs. FISHER & Co.

574. [9837] Do., a very beautiful well-crystallized specimen, Bengal.

575. [9838] Do. Nellore.

576. [9839] Do. Bengal.

577. [10105] Do. Do. BABOO NEWGEE.

578. [1814] Do. Mooltan.

Saltpetre is found in considerable quantities in many parts of the Punjab, especially on the sides of old villages and towns, but it is produced in greatest abundance in the districts of Shahpore, Gujeerat, Multan, and Jhung, from which districts a brisk export trade with Kurachi is carried on.*

579. [6199] Nitrate of potash (Shorah), Lucknow.

This is nitre of the first crystallization. Nitre is found in the earth of old buildings and ruins which has been long exposed to the air; water filtered through this earth is then boiled and concentrated. This kind is only used for frigorific mixtures.†

580. [6191] Nitrate of potash (Shorah), Lucknow.

For frigorific mixtures and gunpowder; 2 seers per rupee; made in various parts of Oude. This is nitre of the second crystallization, and is only used for frigorific mixtures.‡

581. [10162] Saltpetre, Shahabah. R. W. BINGHAM, Esq.

582. [10163] Do.

Saltpetre and salt are produced abundantly in some parts of Shahabad, but crude saltpetre is prepared at from 6 to 7 rupees per local maund by the Nooneahs; this in its crude state would be 15*l.* to 18*l.* per ton, while the salt produced with the saltpetre is of a coarse kind, and only sold to the poorest of the community, under the name of *Kharree Nimuck*. It can, however, easily be purified by boiling, and then is a good and pure salt.§

583. [6190] Sal-ammoniac, or chloride of ammonium, Rausadar, Lucknow.

For tinning and frigorific mixture; 12 annas per seer; made in various parts of Oude. It is manufactured from the contents of cesspools, and is used for tinning copper pots and pans; mixed with common salt, nitre, &c., forms a frigorific mixture.‖

* Central Committee, *Lahore.*
† Central Committee, *Lucknow.*
‡ Central Committee, *Lucknow.*
§ R. W. BINGHAM, Esq.
‖ Central Committee, *Lahore.*

584. [10142] Chloride of ammonium, Calcutta. KANNY LOLL DEY, Sub-Assistant Surgeon, Calcutta.

585. [9833] Sulphate of magnesia, or Epsom salts, prepared from magnesite, or carbonate of magnesia, at Calcutta.

ALUM.

This salt has not hitherto been produced to any very considerable extent in India. The chief source of supply is China, from whence it is largely imported into Bombay.

586. [10146] Alum (potash-alum), Calcutta. KANNY LOLL DEY.

586A. [691] Alum, Kutch. H. H. the RAO.

587. [1847] Alum from Dera Ismael Khan.

Alum is manufactured from a black shale, principally at Kalabag on the Indus, where some 430 tons are annually sold at the rate of 7*l.* 16*s.* per ton. The process of manufacture is almost identical with that employed in European alum works.*

587A. [616] Alum. RAJAH of VIZIANAGARUM.

c. Compounds of Metals Proper, as Salts of Iron, Copper, Lead, &c.

588. [10159] Green vitriol, Shahabad. R. W. BINGHAM, Esq.

589. [1857] Do., or sulphate of iron, procured at Pind Dadun Khan.

It is known as *Heera kasis*, and is said to be dug out of the ground in large masses.

590. [1898] Do. Calcutta. KANNY LOLL DEY.

591. [6455] Do. Do. Messrs. BATHGATE & Co.

592. [9840] Blue vitriol, or sulphate of copper, Umritsur.

Made at Umritsur by boiling sheet copper in oil of vitriol. Sells at 8*d.* per lb.

593. [1825] White lead, or basic carbonate of lead, Punjab.

594. [10139] Do. Do., Calcutta. KANNY LOLL DEY.

* Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

Subdivision III. — MANUFACTURED PIGMENTS, DYES, AND MISCELLANEOUS CHEMICAL MANUFACTURES.

595. [9841] Litharge, or oxide of lead, Calcutta Bazaar.

596. [9842] Vermilion, or protosulphide of mercury, Calcutta.

597. [5309] Realgar, or bisulphide of arsenic, Burmah.

598. [5310] Orpiment, or sulph-arsenious acid, Pegu.

599. [4783] Orpiment, or sulph-arsenious acid, Burmah. Messrs. HALLIDAY, FOX & Co.

600. [4772] Do. Do. Do.

Subdivision V. — MANUFACTURES FOR SANITARY PURPOSES.

This subdivision contains a curiosity, in the shape of a camphor cup, for use after the manner of the quassia-wood, or 'bitter cup,' in vogue in this country.

601. [5130] Camphor Cup, BABOO GOPAUL CHUNDER GOOPTA. Calcutta Bazaar.

SECTION B. — CHEMICAL SUBSTANCES USED IN MEDICINE AND PHARMACY.

Subdivision I. — FROM THE MINERAL KINGDOM.

Non-metallic substances and their compounds; alkalies, earths, and their compounds. These have been already enumerated.

METALLIC PREPARATIONS.

Several of these have been described. The following belong especially to this group, and have been carefully collected by BABOO KANNY LOLL DEY, of Calcutta, as representatives of the metallic preparations employed in medicine :—

602. [1897] Oxide of lead, Calcutta.

603. [10141] Do. Do.

Much used in ointments. Administered also internally as a tonic.

604. [1919] Protosulphide of mercury, or vermilion, Calcutta.

Used externally as well as in fumigations.

605. [10116] Subchloride of mercury, or calomel, Calcutta.

606. [10145] Tersulphide of antimony, Do.

It is used by native practitioners as an astringent in hæmorrhagia. Dose 5 to 10 grs.

607. [10107] Arsenious acid, or white arsenic, Calcutta.

608. [10109] Do. known by the name Semulkhur, Do.

609. [10110] Orpiment, or sulph-arsenious acid, Do.

610. [10127] Orpiment, or sulph-arsenious acid, known as Jorode Sanko, Calcutta.

611. [10108] Realgar, bisulphide of arsenic, or Darmooj, Do.

612. [10111] Do., or Mansul, Do.

Arsenical preparations enter largely into the composition of the native drugs; they are used to cure leprosy, snake-bites, intermittent fevers, and other diseases. They are also employed all over India for suicidal and criminal purposes.

MEDICINAL SUBSTANCES FROM THE VEGETABLE AND ANIMAL KINGDOMS.

It has been found impossible to arrange these according to the directions in the Jury Catalogue. So many medicinal substances employed in India are unknown in any European pharmacopœia, and indeed so little generally known, that no more satisfactory arrangement could be arrived at than by placing them in the following order.

It is to be regretted that very many of the specimens were so damaged as to be beyond the power of recognition, and that so many of the bottles were broken, and the labels completely destroyed, or detached from the specimens, as in the case of a large series of medicinal roots from Malacca, contributed by Chee Yam Chuan, and from Burmah, by Messrs. Halliday, Fox & Co., of Rangoon and London. These accidents have diminished the value of the collection, and have much reduced the numbers sent by various enterprising exhibitors. Many specimens are also too small in quantity to admit of any careful examination.

A large collection has been sent from Moulmein; of these only about twenty are

NATIONAL ARCHIVES OF INDIA

missing owing to the above-named causes. It comprises the following:—

613. [7306] Khekya-poo Khadat Kouk (*Cinnamomum* sp.).

This is used in flatulency and in impurity of blood.

614. [7187] Khadat Kouk, Anan Kouk, Three-leaved Caper (*Capparis* sp.).

This medicine is given in debility, and as an external application in swellings and dropsical diseases.

615. [7348] Nuag Yan (*Menispermaceæ*).

This medicine is given in fever, and also dropsical diseases and dysentery.

616. [7192] Tse Yoa.

This medicine is given in fever, and also dropsical diseases and dysentery.

617. [7301] Oopathetgah.

This is a cooling remedy, dried, ground into powder, and applied to the skin during pyrexia.

618. [7189] Boo-yet (*Clerodendron* sp.)

For dysentery and dropsical diseases.

619. [7329] Gay-donk (*Connarees*).

This is used as an external application on swollen œdematous parts.

620. [7287] Hoan-myet.

This root, pounded, is used for poisoning fishes.

621. [7123] Than-mat (*Sesamum indicum*).

A decoction used in tooth-ache.

622. [7281] Than-ma-ka (*Poirea*).

This root, pounded and mixed with honey, is given in hysterical complaints, and the expressed juice of the leaf is given as an antidote to poison. It acts as an emetic.

623. [7356] Kurway.

This seed is used in eruptive swellings and in impurity of blood, ground into a paste with water.

624. [7322] Kaboung-gyee (*Strychnos Nux Vomica*).

The root of this tree is given in dyspepsia and in fever; it is ground on a flat stone with water and a little salt, and then rubbed on the tongue.

625. [7255] Thaman Kya.

For dyspepsia and hysterical complaints.

626. [7153] Phwa-bet.

This medicine is given as a purgative.

627. [7690] Thettyenggee (*Acacia concinna*).

This is given in impurity of blood, dyspepsia, and also as a purgative.

628. [7294] Danzeekoo.

Used in all diseases of impurity of the blood, the pounded root being mixed with water and drank off.

629. [7311] Ngabyey Jin.

This is given in dyspepsia and to promote secretion of milk. The decoction of the root is taken internally.

630. [7341] Nga Poung Tsag.

This is a valuable medicine in flatulency.

631. [7323] Bon-ma-yaya.

This is given internally in dyspepsia. The powder is also applied to the fauces in sore throat, also (mixed with aloes) given as a purge to horses.

632. [6583] Thenwen.

This is given in cough; the powdered root, mixed with lime juice, is given as a draught.

633. [6590] Kyoungban Myit (*Chaste Root*).

This is given in flatulency.

634. [7300] Gin-dine-tsaynee.

This medicine is used in impurity of blood.

635. [7307] Mahagah.

This is given in febrile diseases.

636. [7303] Yo-doan.

This is used in rheumatism externally and internally.

637. [7256] Toa-tha-ngay Myouk.

This root is ground on a flat stone, with water and a little salt, and then rubbed on the tongue in fever.

638. [7347] Kinpoon Myit.

This medicine is used in hysterical complaints.

639. [7317] Makee Tuka.

It is given to those that are attacked with leprosy; used internally.

640. [6588] Rangoon Croton.

Used as a cathartic and in rheumatism of the joints.

641. [6587] Gon-ga.

This root is ground on a flat stone, with water and a little salt, and then rubbed on the tongue in fever.

642. [7310] Kapmhat.

This medicine is used in impurity of blood.

643. [7332] Tsey-ma-khan.

This is used on sores rubbed as an unguent.

644. [7336] Thamay.

It is given in hysterical complaints.

NATIONAL ARCHIVES OF INDIA

645. [7331] Yin Bya.

This medicine is used after child-birth as a draught, the patient being kept close to the fire, when puerperal fever threatens.

646. [7324] Than Thet Ngui.

In flatulency and impurity of the blood.

647. [7325] Thee-ha-yaza.

This medicine is used in fever by being rubbed on the tongue.

648. [7327] Get Myit (*Acacia* sp.)

Root used in leprosy.

649. [7314] Kouk-kho.

Used in weakness and general debility.

650. [7319] Tseet-doan.

This medicine is used as an external application in œdematous swellings.

651. [6594] Tsau Bah.

Used in impurity of the blood.

652. [7305] Tha Bya Kouk (*Eugenia jambolana*).

Used in flatulency and impurity of blood.

653. [7312] Karamet.

Used in flatulency, impurity of blood, and as pearl powder by Burmese females.

654. [7316] Kyee-pya.

For dysentery.

655. [7337] Than-zeyet Kyee.

Used in flatulency and in impurity of blood.

656. [7289] Nga-ra-nin.

This is given in weakness and general debility, and acts as a tonic.

657. [7288] Thag-yey Zin.

This is used in enlargement of liver.

658. [6596] Tonk Tsa (*Vitex arborea*).

This is used in enlargement of liver.

659. [6586] Tha Ta Tsa.

Used in flatulency.

660. [6591] Kyouk Tsha Gouk (Trumpet Flower Bark).

This is used by the Burmese, by grinding and rubbing on swollen parts, to keep down the swelling in recent wounds.

661. [6598] Na Bai (*Odina Wodier*).

Used with Kyouk Tsha Gouk.

662. [6593] Oak Shet Myit (*Ægle marmelos.*)

This is used in hysterical complaints and dysentery.

663. [6599] Mee Young Noay.

Used in weakness and debility.

664. [7313] Thaphan Myit (*Ficus glomerata*).

Used in dropsical diseases.

665. [7284] Ak Nyah.

This medicine is given in hysterical fits.

666. [7296] Kadoan Nga-nhat.

This medicine is given in fever and bowel complaints.

667. [7290] Kankan Myit (*Mesua*).

Used in impurity of blood.

668. [6595] Kya Yin.

Used as a cathartic.

669. [7318] Ngat Kysap.

Used as a cathartic.

670. [7334] Bagyee Myit (*Clerodendron* sp.).

This is given in hysterical complaints.

671. [7308] Tha Min Ya-pya.

Used in dropsical diseases.

672. [7346] Theling Katha.

This wood is used in fever by being rubbed on the tongue.

673. [7295] Tsin Bagoo.

Used in fever.

674. [7349] Shin Ka See.

Used in fever.

675. [7339] Mayo Myit.

This medicine is given in impurity of blood, and when put in milk causes it to curdle.

676. [7321] Padai Kungya.

This is used in cough.

677. [7304] Myat Meway.

This is used in impurity of blood.

678. [7355] Thasa-gya-yoo.

This medicine is given in bowel complaints.

NATIONAL ARCHIVES OF INDIA

679. [7328] Yoosa-na Bah (*Linum catharticum*).

This is given in fever as sudorific.

680. [6589] Mingagah.

It is given as a cathartic.

681. [7689] Yee-byoo-thee (*Emblica officinalis*).

This is given in cough.

682. [7254] Thit Shain-thee (*Terminalia belerica*).

Used in fever.

683. [7190] Kan Gyouk Nee.

Used in flatulency and impurity of blood.

684. [7324] Kya Nee, Red Lily.

Used in impurity of blood.

685. [7353] Kya Phu, White Lily.

Used in impurity of blood.

686. [7158] Kha Padoon Mah.

Used in impurity of blood and fever.

687. [6585] Kya-thee (*Nelumbium speciosum*).

Used in fever.

688. [6592] Kayapun (*Acanthus* sp.).

This is given in impurity of blood.

689. [7193] Tin-bwen (*Nauclea* sp.).

This is used in impurity of blood, causing vertigo &c.

690. [7188] Thyet Maouk-thee (*Ardisia* sp.).

Used in flatulency and impurity of blood.

691. [7280] Pait Khai-thee, Long Pepper (*Chavica officinalis*).

This is given in fever and flatulency.

692. [7259] Yoay-gyee-thee (*Adenanthera pavonina*).

Used in fever.

693. [7293] Nga-rok-goung (*Piper Nigrum*).

Used in bowel complaints.

694. [7289] Tsayootha-tong.

Used in weakness of any kind before or after illness.

695. [7258] Kyee-thee (*Semecarpus anacardium*).

Used in leprosy.

696. [7257] Aik Moug-thee (*Embelia ribes*).

Used in impurity of blood.

697. [7291] Yoay-pyoo Tsan.

This medicine is given to children for colds and dyspepsia. The kernel of the fruit is used.

698. [7298] Caraway-thee.

Used in impurity of blood.

699. [6584] Kakanwoot Tsan.

Used in impurity of blood.

700. [7354] Noay Gyo (*Glycyrrhiza officinalis*).

This medicine is given in palpitation of the heart; it depresses circulation &c.

701. [7333] Nanwen dét (*Curcuma* sp.).

This medicine is given when the body is heated and feverish.

702. [7330] Tsaythangaigyet (*Helicteres isora*).

Used in impurity of blood.

703. [7343] Lam Nai.

Used in bowel complaints.

704. [7326] Ga Moungmhoag.

Used in impurity of blood.

705. [7350] Kanaka Tsan (*Croton tiglium*).

Used as a cathartic.

706. [7282] Dundoongoup.

Used in hysteria.

707. [7335] Thetdoupkouk.

Used in dropsy.

708. [7345] Kalani Myit.

Used in leprosy.

709. [7340] Aigareet Myit.

This root is said to deprive spirituous liquor of all its strength. A decoction given to an intoxicated person is said to render him immediately sober.

710. [7342] Tset-ga-doung-youk.

Used in fever and on external swelling.

NATIONAL ARCHIVES OF INDIA

711. [7352] Kap Boo.

Used in impurity of blood.

712. [7155] Poung Myit.

Used in debility and weakness.

713. [7344] Pya Noung.

Used in fever.

714. [7292] Alan Bai.

This root is used in fever, rubbed on the tongue.

715. [7302] Oung Maiphu.

This is used in sore eyes.

716. [7315] Kyet-thaheng.

This is given as a purgative.

717. [7351] Kalaia Tsan (*Guilandina bonduc*).

Used in leprosy.

718. [7320] Pahla (*Amomum* sp.).

Cardamom seeds, used in fever; the powder mixed with Nga'rok Goung acts as stomachic.

719. [7297] Marayan.

Used in impurity of blood.

720. [7299] Ban ya Khin.

This is given as a cathartic.

721. [7154] Ngoo thee (*Cassia fistula*).

This is given in debility, and as a cathartic.

Among individuals, the largest collection of drugs has been made by BABOO KANNY LOLL DEY, Sub-Assistant Surgeon of Calcutta. Unfortunately the greater part of the specimens sent by BABOO KHETTUR MOHAN GOOPTU, also a graduate of the Medical College of Calcutta, was so injured as to be incapable of exhibition. As many of the drugs sent by individuals and committees are of the same kind, most of them are enumerated together, but the names of the senders are, as far as possible, always given.

722. [7017] Atees (*Aconitum heterophyllum*), Bombay.

723. [9932] Do. Calcutta. KANNY LOLL DEY.

The root has long been celebrated as a tonic and valuable febrifuge; it is intensely bitter and slightly astringent, with an abundance of farina. There are two kinds of atees, the black and the white, both equally valuable.

724. [10117] Bish (*Aconitum ferox*), Calcutta.

725. [7023] Butchnab (*Aconitum ferox*), Bombay.

The root is highly poisonous, and in the northern parts of India is used for poisoning arrows. Native practitioners administer it in cases of chronic rheumatism. It grows in the Himalayas, and is imported in considerable quantities into the plains, and sold at the rate of one rupee the seer.

726. [10119] Aconite (*Aconitum* sp.), Calcutta.

727. [7156] Mishmee Teeta (*Coptisteeta*), Luckimpore. W. G. WAGENTRIEBER, Esq.

728. [7025] Do. Bombay.

729. [7048] Kulie Koothie (*Helleborus niger*), Bombay.

730. [9923] Do. Calcutta. KANNY LOLL DEY.

Roots brought from Nepaul, used as a powerful cathartic in mercurial and dropsical cases. Price 8 annas per lb.

731. [6165] Black cumin (*Nigella sativa*), Bombay.

Nigella sativa is not found wild, but is extensively cultivated and employed both as a condiment and a medicine.

732. [6143] Seetaphul (*Anona squamosa*), Ahmedabad.

The seeds contain a highly acrid principle, fatal to insects, on which account the natives of India use them powdered and mixed with the flour of *Cicer arietinum* for occasionally washing the hair.

733. [6112] Badian Khutai (*Illicium anisatum*), Bombay.

The natives employ the seeds most extensively as a stomachic and carminative.

734. [9947] Rusot (extr. *Berberis lycium*), Calcutta. KANNY LOLL DEY.

Is prepared by digesting in water sliced pieces of the root, stem, and branches in an iron vessel, boiling for some time, straining and then evaporating to a proper consistence. This extract is much employed in Hindoo medicine, especially as an external application in ophthalmia. It is likewise considered an extremely valuable febrifuge. Dose 3 ℥ss diffused in water. Price 4 annas per lb.

735. [7039] Goorwail or Gooluncha (*Tinospora cordifolia*), Bombay.

Is extensively used as a tonic and febrifuge. The stems, roots, and leaves are bitter, and afford a decoction much used as a bitter tonic in convalescence from fevers and acute diseases generally. Dose 3ij. to ℥ss in decoction. Price 2 annas per lb.

NATIONAL ARCHIVES OF INDIA

736. [1914] Colomba (*Cocculus palmatus*), Calcutta. KANNY LOLL DEY.

737. [7021] Do. Bombay.

This is the well-known Columba root. It is cultivated in some localities and employed as a tonic.

738. [7020] Cocculus Indicus (*Anamirta cocculus*), Bombay.

The fruits known as 'Cocculus Indicus' are exported from Malabar and Travancore, and shipped for the London market. From 1852 to 1856, 5,817 cwt. were exported, from the Madras Presidency. In India they are powdered and employed for destroying pediculi, or made into an ointment and employed externally in itch.

739. [6166] Nilofer (*Nymphæa lotus*), Bombay.

740. [6043] Kumul ka phool (*Nymphæa lotus*), do.

741. [6607] Romalgatta (*Nelumbium speciosum*), Calcutta. KANNY LOLL DEY.

This is a very common plant in tanks all over India. The roots and seeds are eaten, the young shoots as an ingredient in curries, the seeds either raw, roasted or boiled. In medicine the root is said to be demulcent and diuretic, and the stalks, leaves, and flowers as cooling and tonic.

742. [6040] Post or Poppy capsules (*Papaver somniferum*), Bombay.

In Upper India an intoxicating liquor is prepared by heating the capsules of the poppy with jaggery and water. In medicine they are employed for their anodyne properties, as fomentations for inflamed surfaces, and a syrup prepared from them to allay cough &c.

743. [4950] *Cratœva Roxburghii*, Chingleput. DR. SHORTT.

The bark macerated in water, and mixed with ginger, long pepper, milk, and gingelly oil is applied as a liniment for drying up humours. An infusion of the bark is also given in flatulency.

744. [6148] Bendee seed (*Hibiscus esculentus*), Ahmedabad.

The mucilaginous seeds of the Ochro are added to soups, and in medicine are employed chiefly as a demulcent.

745. [7167] Patwah seeds (*Hibiscus cannabinus*), Lucknow.

These seeds are also mucilaginous.

746. [6562] Mooskh dana (*Abelmoschus moschatus*), Calcutta.

The seeds are cordial and stomachic, and when bruised have been given to counteract the effects of bites from venomous reptiles.

747. [4946] Indian mallow (*Abutilon indicum*), Chingleput. DR. SHORTT.

The seeds are considered laxative, and the fruits entire are employed in decoction for the sake of their mucilage.

748. [7376] Mallow flowers (*Althæa*, sp.), Bombay.

Employment similar to the marsh mallow flowers of Europe.

749. [7052] Murad sing (*Helicteres Isora*), Bombay.

The natives of India, like those of Europe in former times, believing that external signs point out the properties possessed by plants, consider that the twisted fruit of *Helicteres Isora*, indicates that it is useful, and they therefore prescribe it in pains of the bowels.

750. [7032] Khakadee (*Citrus medica*), Bombay.

The citron is cultivated in the Peninsula, and is used as in Europe.

751. [7038] Narungee-ke-chal (*Citrus aurantium*), Bombay.

752. [7049] Bael (*Ægle marmelos*), Bombay.

753. [10747] Belpatri (*Ægle marmelos*), Mangalore. V. P. COELHO, Esq.

754. [1835] Bael fruit (*Ægle marmelos*), Punjab.

Belgiri or the Indian Bel fruit (dried fruit of the *Ægle marmelos*). Grown everywhere in the hills to the south of the Himalayan mountains. Used as a sherbet; the pulp also is eaten. Greatly used by the natives as an astringent in diarrhœa and dysentery, in doses of gr. xlv. Has been employed in the latter disease at the Medical College Hospital, Calcutta, with success. The clear jelly-like substance from the seeds forms a substitute for gum. Dose, one fruit. Price ½d. each.*

755. [6132] Wood apple (*Feronia elephantum*), Ahmedabad.

756. [9911] Neem bark (*Azadirachta indica*), Calcutta. KANNY LOLL DEY.

The tree is very common in India. The decoction of the leaves is used for clearing foul ulcers; leaves are used for making poultices. The bark is used as a most valuable tonic and febrifuge, also as a vermifuge; it can be used as a substitute for chinchona. Dose, 3j. to 3ij. in infusion. Price 4 annas per lb.

757. [7033] Dek ke phul (*Melia azedarach*).

758. [6242] Mangosteen rind (*Garcinia mangostana*), Bombay.

Rind of the fruit imported from Singapore; used with much effect in chronic hæmorrhagic dysentery. Dose, 3j. to 3ij. in infusion. Price 1 rupee per lb.

759. [6245] Gookhroo (*Tribulus terrestris*), Poona.

* DR. BROWN, Lahore, Medical College.

NATIONAL ARCHIVES OF INDIA

760. [6207] Gookhroo (*Tribulus lanuginosus*), Calcutta. KANNY LOLL DEY.

The powdered seeds are given in decoction in dropsy and gonorrhœa.

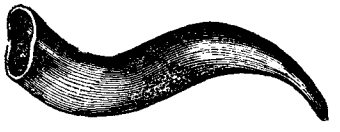
761. [7014] Tejbul bark (*Xanthoxylon* sp.), Bombay.

This aromatic bark is employed as a condiment; in medicine for its supposed efficacy in strengthening the stomach.

762. [1833] Jujubes or Unab (*Zizyphus jujuba*), Punjab.

The dried fruit of the Lotus tree. Common all over the Punjab, ripens in February, and is then plucked and dried. The best comes from Kabul. Used by the natives as a refrigerant in fevers, and as a local application for pain in the ear; also as a laxative. Employed as an infusion. Price 2*s.* per lb.*

763. [9369] Kakra-singee (*Rhus kakrasinghee*), Kangra.



KAKRA-SINGEE.

These horn-like excrescences, formed probably in consequence of the deposition of the ova of some insect, have long constituted a famed article of Hindoo medicine: they are found in the Deyra Dhoon and everywhere in the hills, at moderate elevations.

DR. ROYLE refers the specimens contained in his collection, which are identical with the above, to *Rhus kakrasinghee*, but it has been doubted whether these galls are produced by a species of *Rhus*, as they are nearly identical with those found on *Pistacia terebinthus*.

764. [9366] Bhela (*Semecarpus anacardium*), Calcutta. KANNY LOLL DEY.

The nuts are in general use for marking cotton cloths; the colour is improved and prevented from running by the mixture of a little quick lime and water. The acrid juice of the shells is given in small doses in leprous and scrofulous affections. Price 2·annas per lb.

765. [6038] Balessan (fruits of *Balsamodendron carpobalsamum*), Bombay.

These fruits have probably no medicinal use, but are sent on account of their botanical interest.

766. [6241] Hudgah (*Balanitis ægyptiaca*), Bombay.

The unripe drupes are bitter and violently purgative.

767. [1831] Root of *Hedysarum gangeticum*, Punjab.

Saloporni, believed to be the *Hedysarum gangeticum*, one of the *Leguminosæ*, a bitter tonic used in fever.

* DR. BURTON BROWN.

768. [4973] Legumes of *Agati grandiflora*, Chingleput. DR. SHORTT.

These legumes are eaten by the natives in their curries.

769. [6025] Pulas ke beej (*Butea frondosa*), Bombay.

The large flat seeds deprived of their outer covering used as an anthelmintic in cases of tapeworm and also as deobstruent. Dose gr. iij. to ʒj.

770. [6554] Areca nuts (*Areca catechu*), Midnapore.

771. [9935] Do. Calcutta. KANNY LOLL DEY.

772. [6555] Sooparee (*Areca catechu*), Cuttack.

The Goobak of the Sungscreet classics—the nut of the *Areca catechu*. This graceful tree is cultivated to an extent only in the Pooree district. The nut is used in this province almost exclusively in conjunction with other ingredients, with the leaf of the 'Piper Betel,' forming together the well-known masticatory of the East, '*Pan*.' Locally at Cuttack the best nuts are retailed at about 2 annas per English lb. weight. The tree is grown in company with the cocoa nut in plantations in moist situations, and, like the cocoa nut, is productive and valuable. An astringent extract is also, the Committee believe, obtained from old areca nuts, which is used in dyeing processes.*

The betel nuts are much relished by the natives, being chewed with the leaf of betel pepper (*Chavica Betel*) spiced with chunam (lime), but they sadly discolour the teeth. They are considered to be astringent and tonic. Roasted and powdered they make an excellent charcoal powder for the teeth, and are much used as an antiseptic tooth powder.

773. [7993] Babool bark (*Acacia arabica*).

Babool bark is used as a tonic in infusion, and a strong decoction is employed as a wash for ulcers, and finely powdered and mixed with gingelly oil it is recommended externally in cancerous affections.

774. [7016] Fruits of a species of *Astragalus*.

775. [1840] Mulathi (*Glycyrrhiza glabra*), Punjab.

776. [1911] Liquorice (*Glycyrrhiza glabra*), Calcutta. KANNY LOLL DEY.

777. [4809] Liquorice, Burmah. Messrs. HALLIDAY, FOX & Co.

The root of the liquorice plant, grown in large quantities about Peshawur; dug up, dried, and cut into pieces; used by the natives as a tonic in fever, in doses of gr. lx. Also as a demulcent in coughs &c.; also in all diseases consequent upon an undue accumulation of phlegm or bile. Price 1*d.* per lb.†

* Local Committee, *Cuttack.*
† DR. BURTON BROWN.

NATIONAL ARCHIVES OF INDIA

778. [7007] Cowage (*Mucuna prurita*), Bombay.

The stinging hairs of the pod are employed when mixed with honey as an anthelmintic in European practice, but it is doubtful whether the natives employ them at all.

779. [4041] Fenugrec (*Trigonella fœnum-græcum*), Madras.

780. [6469] Do. Calcutta.

781. [9936] Do. Do. KANNY LOLL DEY.

The seeds are mucilaginous and are employed in dysentery.

782. [7003] Gardul (*Entada pursœtha*), Bombay.

The kernel of the seeds is employed by the Hill people as a febrifuge.

783. [10126] Croton seed (*Croton tiglium*), Calcutta. KANNY LOLL DEY.

784. [9252] Do. Moulmein.

785. [4027] Do. Madras.

786. [10739] Croton fruits. S. Canara. V. P. COELHO, Esq.

787. [4769] Cankhosa (*Croton tiglium*), Burmah. Messrs. HALLIDAY, FOX & Co.

788. [132*] Croton oil (*Croton tiglium*), Madras.

The seeds yield a powerfully cathartic oil. It is prepared by grinding the seeds, placing the powder in bags, and pressing them between plates of iron. The oil is then allowed to stand fifteen days, and afterwards filtered. The residue of the expression is saturated with twice its weight of alcohol, heated on the sand-bath from 120° to 140° Fahr., and the mixture pressed again. The alcohol is distilled off, the oil allowed to settle, and filtered after a fortnight. One seer (2 lb.) of seed furnishes 11 fluid ounces of oil, 6 by the first process, 5 by the second. The oil is well known in this country for its medicinal properties.

789. [6161] Bowchee (*Psoralia corylifolia*), Bombay.

790. [9944] Babchee (*Psoralia corylifolia*), Bazaar, Calcutta.

791. [6250] Babchee, Poona.

The seeds are aromatic and slightly bitter; they are used by the natives as a stomachic and deobstruent, and also in cases of leprosy.

792. [6237] *Notonia grandiflora*, Bombay.

Dr. Gibson's specific in hydrophobia.

793. [4967] Seeds of *Bauhinia pulcherrima*, Chingleput. DR. SHORTT.

794. [4960] Seeds of *Bauhinia tomentosa*, Chingleput. DR. SHORTT.

795. [4968] Seeds of *Acacia* sp. Do. Do.

796. [9367] Nickar (*Guilandina Bonduc*), Calcutta. KANNY LOLL DEY.

Seeds, a powerful tonic, and very valuable febrifuge; the kernels are very bitter; reduced to powder and mixed with black pepper, they are used in ague with the best results; powdered small with castor oil, they are applied externally in hydrocele. Dose gr. v. to gr. x. Price 12 annas per lb.

The CHITTAGONG COMMITTEE adds the following information. It grows well in waste land and in the jungles of this district. It is used as a febrifuge administered in pills, 4 grains of the pounded kernel with 4 grains of the black pepper. It is a very effectual remedy, but to make it so, the pills must be given fresh. If the seeds are not broken they will keep good for years, but if broken, and the kernel kept for four or five days, they become useless as a medicine for fever.

797. [6167] Senna (*Cassia lanceolata*), Bombay.

798. [1790] Do. (*Cassia* sp.) Punjab.

799. [1791] Do. Do. Do.

800. [9942] Senna mookee (*Cassia obovata*), Calcutta. KANNY LOLL DEY.

Largely grown about Peshawur. The leaves are collected and dried in the sun. Used by both Europeans and natives as a purgative and carminative. Dose 3ij. Price 6*d.* per lb.

801. [7012] Chemil seeds (*Cassia absus*), Bombay.

The seeds are bitter and mucilaginous; they are sometimes employed in ophthalmia.

802. [1859] Poar seeds (*Cassia tora*), Punjab.

The seeds are employed in preparing a blue dye. They are also used medicinally.

803. [9915] Beekeedanna (*Cydonia vulgaris*), Calcutta. KANNY LOLL DEY.

804. [7010] Do. Bombay.

Seeds used as a valuable demulcent, tonic, and a restorative remedy. Price 12 annas per lb.

805. [6201] Chaulmoogra (*Hydnocarpus odorata*), Chittagong.

Seeds imported from Sylhet; yield by expression about

NATIONAL ARCHIVES OF INDIA

10 per cent. of a thick fixed oil, of unpleasant flavour and rather offensive smell; used extensively in the treatment of cutaneous diseases; also given internally in *Lepra tuberculosa.* Dose ♏ iij. to ♏ vj. of oil. Price for oil, 2 rupees per lb.; seed, 2 annas per lb.

806. [9931] Potole root (*Trichosanthes dioica*), Calcutta. KANNY LOLL DEY.

The root is extensively used as a hydragogue cathartic in dropsy. Fruits and leaves are used extensively in curry. Dose gr. ij. to gr. vj. in powder. Price 5 annas per lb.

807. [4962] Root of *Coccinia indica*, Chinglepul. DR. SHORTT.

This is a favourite medicine with the native practitioners in syphilitic disorders.

808. [7009] Katairee (*Cucurbita* sp.), Bombay.

809. [9937] Ghosal paul (*Momordica dioica*), Calcutta. KANNY LOLL DEY.

The root is employed in the form of an electuary in hæmorrhoids.

810. [1890] Colocynth (*Citrullus colocynthis*), Calcutta. KANNY LOLL DEY.

811. [6956] Bitter apple (*Cucumis colocynthis*), Chingleput. DR. SHORTT.

The pulp and seeds of the colocynth (*Indrewan*) produce exceedingly powerful cathartic effects; extract made from the pulp is equal to English extract of colocynth. Dose gr. v. to gr. x. Price 4 annas per lb.

812. [6075] Singara (*Trapa bispinosa*), Poona.

813. [6072] Do. Bombay.

These farinaceous fruits are chiefly employed as an article of food—they are also mixed with hermodactyl as an adulteration. In China the similar fruits of *Trapa bicornis* are much sought after as food.

814. [4977] *Hydrocotyle asiatica*, Chingleput. DR. SHORTT.

815. [1882] Thalkin (*Hydrocotyle asiatica*), Calcutta. KANNY LOLL DEY.

The plants grow wild in Bengal; the leaves are bitter; are toasted and given in infusion to children in bowel complaints and fevers. They are also applied as anti-inflammatory to bruises; it is said to be an excellent remedy in leprosy on the Malabar Coast. Dose ʒj. to ʒij. of fresh juice. Price 2 annas per lb.

816. [6240] Fitura (*Prangos pabularia*), Bombay.

817. [6141] Gajur (*Daucus carota*), Ahmedabad.

818. [6991] Sowa (*Anethum Sowa*).

The seeds of the Indian dill are to be met with in every bazaar. They not only form an ingredient in curries, but are also employed as a carminative, and are bruised and applied externally in rheumatic and other swellings of the joints.

819. [7036] Bhaphullee (*Ptychotis montana*), Bombay.

820. [9916] Ajwan (*Ptychotis ajowan*), Bażaar, Calcutta.

821. [6470] Do. Do. Do. KANNY LOLL DEY.

The dried seeds are used as a substitute for aniseed, both as an aromatic and in colic. Also as a deobstruent in ischuria and dysmenorrhœa, and as a stimulant in catarrh and hemicrania. Employed as an infusion. Dose two drachms. Price 2*s.* per lb.*

822. [1805] Black Carraway (*Carum nigrum*), Punjab.

823. [9929] Carraway (*Carum nigrum*), Bazaar, Calcutta.

824. [9903] Sha jeera (*Carum album*), Do. KANNY LOLL DEY.

The dried seeds are used as a substitute for carraway seeds, similarly to those of the *Ptychotis.* Dose 30 grains. Price 1*s.* per lb.

825. [1829] Anisbu (*Ptychotis involucrata*), Kabul.

826. [9919] Bonjewan (*Ligusticum diffusum*), Calcutta. KANNY LOLL DEY.

Seeds used as a carminative. Price 3 annas per lb.

827. [9906] Khetpapra (*Oldenlandia biflora*), Calcutta. KANNY LOLL DEY.

Plants extensively cultivated in Bengal. The whole plant used in infusion as excellent tonic and febrifuge in chronic fever. Dose ʒj. to ʒij. Price 8 annas per lb.

828. [7011] Pieraloo (*Randia dumetorum*), Bombay.

The fruits are used as a fish poison, and also in medicine as an emetic.

829. [2840] Deekamul (*Gardenia lucida*), Raepore.

The young branches of the tree which yields the Dikamali resin, and with which they are impregnated.

830. [1841] Baman Lal (*Centaurea Behen*), Punjab.

* DR. BURTON BROWN.

NATIONAL ARCHIVES OF INDIA

831. [7028] La Behmen, Bombay.

The dried roots of two varieties of a composite plant, chiefly obtained from Kabul. Used by the natives as a tonic in debility, in doses of 4 drachms; also in impotence as a deobstruent. Price 1*s.* per lb. Not at present used in European medicine, but was formerly employed as an aromatic stimulant.

832. [1837] Baman sufed, Kabul.

This is the white Behen root of the old pharmacopœias, now rarely met with and not employed medicinally in Europe.

833. [7034] Kasnee seeds of *Cichorium intybus*, Bombay.

834. [7046] Akurkura (*Pyrethrum indicum*), Do.

835. [9912] Do. (*Anacyclus pyrethrum*), Calcutta. KANNY LOLL DEY.

Indian pellitory; the roots imported; used as an external as well as an internal stimulant and sialogogue. Dose ʒj. to ʒj. in infusion. Price 12 annas per lb.

836. [7045] Nak chiknee (*Artemisia sternutoria*), Bombay.

The powdered plant, which is called the 'sneezer,' is used as a sternutatory.

837. [1867] Assautin (*Artemisia indica*), Kabul.

It has a very bitter taste. Grows chiefly in Kabul. Used by the natives as a febrifuge, in asthma, in diseases of the brain, and also in dyspepsia. Leaves are much used in scents for its strong odour; it yields a volatile essential oil when distilled. Price 5 annas per lb.

838. [6435] Baahiring (*Embilia ribes*), Chota Nagpore.

839. [9920] Borunga (*Embilia ribes*), Calcutta. KANNY LOLL DEY.

840. [7008] Baibarung (*Embilia ribes*), Poona.

The dry berries come from Syhlet; are pungent; given in infusion, they are anthelmintic; also heating and stimulant. Dose gr. v. to ϑj. in powder. Price 5 annas per lb.

841. [4972] Mudar bark (*Calotropis gigantea*), Chingleput. DR. SHORTT.

842. [10125] Do. Calcutta. KANNY LOLL DEY.

The root, bark, and inspissated juice are used as powerful alteratives; the natives use the powder of the roots in almost all cutaneous affections, especially in syphilitic complaints, and in leprosy; it is used in place of ipecacuanha. Dose gr. iv. to gr. viij. Price 4 annas per lb.

843. [5121] Anta Moole (*Hemidesmus indicus*), Cuttack.

844. [9917] Anta Moole, Calcutta. KANNY LOLL DEY.

Plant very common in Bengal; the roots largely used as a substitute for sarsaparilla. Dose ʒj. to ʒiij. in decoction. Price 3 annas per lb.

845. [9913] Shamalata (*Ichnocarpus frutescens*), Calcutta.

The plant is occasionally used as a substitute for sarsaparilla. price 12 annas per lb.

846. [6238] Inderjan (*Wrightia antidysenterica*), Bombay.

The seeds very bitter, are used medicinally, being boiled in milk, and given in hæmorrhoids and dysentery, and in docoction in fever and gout; also used as an anthelmintic. Dose gr. v. to ϑj. Price 5 annas per lb.

The bark of the root is astringent and febrifuge, and is used as a specific in dysentery and bowel complaints. Dose ʒj. to ʒiij. in decoction. Price 8 annas per lb.

847. [2835] Kechlab (*Strychnos nux vomica*), Raepore.

848. [10742] Do. Mangalore. V. P. COELHO, Esq.

849. [10113] Do. Calcutta. KANNY LOLL DEY.

850. [10112] Do. Do.

851. [10114] Do. Do.

852. [4915] Do. Chingleput. DR. SHORTT.

Employed chiefly as an infusion; the trees are very common in the Bengal jungle; the seeds are sold in great abundance in the bazaar; it is used as a stimulant and tonic in debility and rheumatism; as an aphrodisiac; also as a poison. Price 4 annas per lb.

853. [1855] Clearing-nuts (*Strychnos potatorum*), Punjab.

854. [9905] Nermali (*Strychnos potatorum*), Calcutta. KANNY LOLL DEY.

The clearing nut. By rubbing the nuts round the inside of water-pots containing muddy water, the impurities very soon fall to the bottom, leaving the water clear and perfectly wholesome. Price 2 annas per lb.

855. [1845] Chiretta (*Agathotes chirayta*), Punjab.

856. [6570] Do. Calcutta.

857. [7047] Do. Bombay.

858. [9943] Do. Calcutta.

This is an exceedingly valuable tonic and febrifuge. The whole plant is pulled up at the time that the flowers begin to decay, and is dried for use. It is much employed in India as a substitute for gentian, by which name it is known amongst the European residents. The root is

NATIONAL ARCHIVES OF INDIA

considered the bitterest part, and it is best administered in the form of a tincture; the nuts of *Guilandina bonduc* are sometimes pounded and given with it.

859. [6247] Moota (*Pedalium murex*), Bombay.

The seeds are diuretic, and are employed in dropsy.

860. [6205] Tooti (*Martynia diandra*), Calcutta. KANNY LOLL DEY.

861. [5032] Do. Chingleput. DR. SHORTT.

862. [7022] Turbeth or Teoree (*Ipomea turpethum*), Bombay.

The bark of the root is used as a hydragogue cathartic; the root being free from a nauseous taste and smell, possesses a decided superiority over jalap, for which it might be substituted. Dose gr. x. to. 3ss. Price 12 annas per lb.

863. [7005] Kala dana (*Pharbites nil*), Bombay.

864. [9930] Do. Calcutta. KANNY LOLL DEY.

Seeds used as an effectual and safe cathartic. Dose 3ss. to 3j. Price 4 annas per lb.

The plant is cultivated in Bengal; the powder of the seeds is used as an excellent tonic purgative, and is very useful in *Lepra tuberculosa* &c. The infusion of the seed is demulcent. Dose ϑij. to ϑiss. in powder.

865. [1832] Dodder (*Cuscuta reflexa*), Punjab.

Grows about Lahore, but the best specimens are obtained from the sub-Himalayan country. The whole leafless herb is gathered and dried; it is employed either in mixture or infusion as a laxative in fever, as an anthelmintic, and also as an alterative in cancer. Dose 3ij. of the powder. Price 1*s.* per lb.*

866. [1247] Gaozuban (*Onosma bracteata*), Bombay.

867. [6145] Wairitak (*Solanum melongena*), Ahmedabad.

The fish boiled in gingelly oil, is used as a remedy for toothache.

868. [1904] Bakoor (*Solanum indicum*), Calcutta.

The root is used in infusion as stimulant in cases of fevers and coughs; the juice of the leaves boiled with the juice of fresh ginger is administered to stop vomiting. Dose 3ij. to 3j. in infusion. Price 4 annas per lb.

869. [9910] Kantee karee (*Solanum Jacquini*), Calcutta.

The whole plant is used in decoction as expectorant in coughs and consumptive complaints, also in humoral asthma. Vinum made from root is used to check vomiting. Dose 3ij. to 3vj. in infusion. Price 2 annas 6 pie per lb.

870. [6243] Neesah (*Physalis somnifera*), Bombay.

The root is deobstruent and diuretic, the fruit diuretic. All parts of the plant are employed by native practitioners.

871. [1789] Henbane (*Hyoscyamus niger*), Punjab.

872. [9909] Do. Calcutta. KANNY LOLL DEY.

873. [7030] Do. Bombay.

The seeds are used as a slight stimulant. Price 3 annas per lb. They are obtained chiefly from Kabul and Khorassan.

874. [4952] Datura (*Datura alba*), Chingleput. DR. SHORTT.

The plant is known for the intoxicating and narcotic properties of its fruit. Price 5 annas per lb.

The root is used in cases of violent headache, and in epilepsy. In India it is a very common practice to employ Datura seeds for stupefying and even poisoning those whom they are at enmity with. Price 5 annas per lb.

875. [6049] Do. (*Datura metel*), Bombay.

876. [4974] Datoora root (*Datura fastuosa*), Chingleput. DR. SHORTT.

877. [6818] Wild mint seed, Burmah. Messrs. HALLIDAY, FOX & Co.

878. [4955] Basil seed (*Ocymum basilicum*), Chingleput. DR. SHORTT.

879. [9921] Babooi Toolsi (*Ocymum basilicum*, var. *pilosum*), Calcutta. KANNY LOLL DEY.

The whole plant has a grateful smell. The juice of the leaves are used in catarrhal affections in children. This shrub is considered sacred in India. Dose 3j. to 3ij. warm. Price 12 annas per lb.

880. [7004] Balungoo (*Dracocephalum Royleanum*), Bombay.

881. [1785] Ustakhudas (*Lavendula stœchas*), Punjab.

Chiefly from Kashmir. Employed either in powder or infusion as a laxative and tonic in diseases of the heart and brain; especially as a nervine tonic in epilepsy and headache. Dose 3iv. Price 1*d.* per lb.

882. [1888] Kala megh (*Andrographis paniculata*), Calcutta.

* DR. BURTON BROWN.

NATIONAL ARCHIVES OF INDIA

883. [6214] Kala megh (*Andrographis paniculata*), Calcutta. KANNY LOLL DEY.

Under the name of Creyat this plant has a wide reputation for its tonic and stomachic properties. It is employed in cholera and dysentery. It is found wild in the North, and is cultivated in the South.

884. [1879] Boree Gopum (*Ruellia litibrosa*), Calcutta.

885. [4975] *Asteracantha longifolia*, Chingleput. DR. SHORTT.

The roots are considered tonic and diuretic, and the leaves boiled in vinegar are used as a diuretic.

886. [7035] Lal chitra (*Plumbago rosea*), Bombay.

887. [6988] Lall Chitta, Chittagong.

Is a species of plumbago, with bright red flowers; the Mugs use the roots of this as an irritant; they bruise a piece of the root, and lay it on any part of the human body, and in a very short time a blister rises; but the action is so violent and painful, that it could not be generally employed in practice.*

888. [9904] Isabgool (*Plantago ispaghula*), Calcutta.

889. [7002] Ispagool (*Plantago ispaghula*), Bombay.

The seeds highly mucilaginous, and very much used as a demulcent in dysentery. Dose ʒij. to ʒss. in infusion. Price 3 annas per lb.

890. [9907] Azareh (*Achyranthes aspersa*), Calcutta. KANNY LOLL DEY.

891. [7015] Do. Bombay.

The flowering spikes, rubbed with a little sugar, are made into pills, and given in hydrophobia, and in cases of snake-bites. Fresh leaves made into a pulp, applied externally to the bites of scorpions with great effect. Dose gr. v. to gr. xx. Price 4 annas per lb.

892. [1795] Rhubarb (*Rheum emodi*), Punjab.

893. [1796] Do. (*Rheum* sp.), Kangra.

894. [9939] Do. (*Rumex tuberosus*?), Calcutta. KANNY LOLL DEY.

The inferior quality of rhubarb comes from China, and is used as a gentle purgative. Dose ʒss. to ʒj. in powder. Price 12 annas per lb.

895. [7006] Maida luckri bark (*Tetranthera Roxburghii*), Bombay.

Mildly astringent, used by the Hill people in diarrhœa.

* Local Committee, *Chittagong*.

896. [1854] Bhera (*Terminalia belerica*).

The fruit is collected, and called the Beleric Myrobalan. It is administered by the natives either in powder or infusion, and is used as an astringent tonic in loss of appetite and debility. The kernels are said to be intoxicating. It is distinguished from other Myrobalans by being slightly pentangular with rounded angles, and having a smooth surface. Dose ʒj. of the powder. Price 3*d*. per lb.

897. [1817] Harhur (*Terminalia chebula*).

FRUIT.

The fruit is used both in powder and infusion as a laxative and tonic in fever and in brain disease. Dose ʒj. Price 3*d*. per lb.

898-9. [1800-1] Packhan bed, Kangra.

A root obtained from Thibet, believed to be an antidote for opium, and used as such in cases of poisoning by that drug, either in powder, in doses of 15 grains, or in infusion.

900. [7042] Keeramar (*Aristolochia bracteata*), Bombay.

Every part of the plant is nauseously bitter. An infusion of the dried leaves is given as an anthelmintic. The leaves beaten up with water are given internally in cases of snake-bites. The plant grows abundantly in the Deccan.

901. [1839] Juramina mudharo (*Aristolochia longa*), Kabul.

Is used both in powder and mixture; employed as a tonic in diseases of the chest and brain, and especially in headache. Dose ʒij. Price 2*s*. per lb.

902. [10123] (*Aristolochia indica*), Calcutta. KANNY LOLL DEY.

The root is nauseously bitter; it possesses a powerful emmenagogue property; it is used for procuring abortion; and is also considered to be a valuable antidote to snake-bites, being applied both externally and internally. Price 4 annas 6 pie per lb.

903. [1868] Asarabacca (*Asarum europæum*), Kangra.

904. [1869] Do. Do. Do.

905. [1830] Asorun (*Asarum europæum*), Do.

The dried leaves are used as an expectorant, and employed also by natives as a deobstruent and tonic in diseases of the brain, stomach, and liver. Dose ʒiss. Price 3*d*. per lb.

NATIONAL ARCHIVES OF INDIA

905A. [1786] Ukkulbeer (*Datisca cannabina*), Punjab.

Ekolbir, used as an expectorant in catarrh in doses of gr. xlv.; also as a local application for carious teeth.

906. [9934] Kamala (*Rottlera tinctoria*), Calcutta. KANNY LOLL DEY.

A red powder formed on the outside of the capsules of the *Rottleria tinctoria*, called the monkey's nut, as these animals are believed to use the powder instead of rouge, is obtained from the hills about Chumba. It is used in powder mixed with the curd of milk, as a purgative and anthelmintic in doses of ʒij. Price 1*s.* per lb. Has lately been introduced into European medicine, and used with great success as an anthelmintic.

907. [9941] Amleka (*Phyllanthus emblica*), Calcutta. KANNY LOLL DEY.

Seeds given in infusion as a cooling remedy in bilious affections and nausea, also in diarrhœa; used also by native females for cleaning their hair. Dose ʒj. to ʒss. Price 2 annas per lb.

908. [1828] Hirbi (*Euphorbia verrucosa*), Kangra.

909. [1850] Bhang (*Cannabis sativa*), Punjab.

910. [1846] Churrus (*Cannabis sativa*), Punjab. The resinous exudation of hemp.

Charus is a resinous exudation from the hemp plant of the tracts north of the Punjab. It is brought into the Punjab from Ladakh *viâ* Kulu, Kangra, and Cashmere; also from Yarkand and Persia *viâ* Peshawur and Dera Ishmael Khan, on the western frontier of the Punjab. A small quantity placed in the hookah and smoked, produces almost immediately an intoxicating effect. Price 8*s.* 4*d.* per lb.*

The dried hemp plant which has flowered, and from which the resin has not been removed, is called Gunjah; it is used for smoking alone. The alcoholic extract of it is used medicinally as an antispasmodic and anodyne, very useful in spasmodic coughs, in tetanus, in hydrophobia, &c. Dose—Extract ¼ gr. to gr. j. Price, 8 annas per lb.

The larger leaves and capsules without the stalks are called *Bhang*, *Subjee*, or *Siddhee*. They are used for making an intoxicating drink, for smoking, and in the conserve or confection termed *Majoom*. *Bhang* is cheaper than *Gunjah*, and though less powerful, is sold at such a low price, that for one pice enough can be purchased to intoxicate a person habituated to it. Dose, ʒj. in infusion for intoxication. Price, 8 annas per lb.

The resinous juice that exudes and concretes on the leaves, slender stems, and flowers, when separated, constitutes the churrus; it is collected in great abundance in Nepal, also in Goruckpore; it is used for smoking, mixed with a little tobacco. Price, 2 rupees per lb.

The majoom or hemp confection is a compound of sugar, butter, flour, milk, and sidhee or barley. Dose ʒj. to ʒiij. for intoxication. Price, 2 rupees per lb.

911. [7051] Cubab cheenee (*Piper cubeba*), Bombay.

912. [9918] Kabob chenee (*Piper cubeba*), Calcutta. KANNY LOLL DEY.

913. [1906] Do. Do. Do.

914. [6341] Do. Do. Java. JOSE D'ALMEIDA, Esq.

Employed among other purposes in gonorrhœa. Dose, ʒj. to ʒij. Price, 1 rupee 8 annas per lb.

915. [6164] Pipilee mool (*Chavica Roxburghii*), Bombay.

916. [1798] Baami (*Taxus baccata*), Kangra.

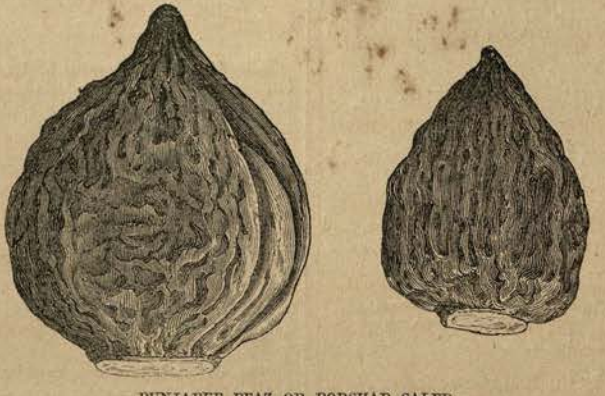
The leaves are used by the natives as an expectorant in catarrh; administered in powder in doses of gr. xlv. or in decoction.

917. [1886] Aloes (*Aloë indica*), Calcutta. KANNY LOLL DEY.

918. [9914] Zafran (*Crocus cashmerianus*), Calcutta. KANNY LOLL DEY.

919. [7031] Keyswo (*Crocus cashmerianus*), Bombay.

920. [6068] Punjabee Peaz or Podshap salep, Bombay.



PUNJABEE PEAZ OR PODSHAP SALEP.

* Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

921. [7018] Soorungan tulli (*Bitter hermodactyls*), Bombay.

922. [7044] Suffaid Mooslee (*Murdannia scapiflora*).

923. [1836] Orris root (*Iris* sp.), Kashmir.

924. [7037] Cairoofsha (*Iris florentina*), Bombay.

925. [1808] Kuth metha (*Costus arabicus*), Punjab.

926. [1807] Do. Kabul.

The root is brought down from Kashmir in large quantity, and sold to the Chinese, who burn it as incense. Used by the natives in infusion in rheumatism as an anodyne. Dose, gr. xxx. Price, 3*s.* per lb.

927. [9908] Huldee (*Curcuma longa*), Calcutta.

Plant is common in Bengal, where the root is extensively used as a condiment. Price, 1 anna 6 pice per lb.

928. [7026] Amba Hulda (*Curcuma zedoaria*), Ahmedabad.

929. [7027] Kutchoora (*Curcuma zerumbet*), Bombay.

930. [7019] Kupoor Kuchree (*Hedychium spicatum*), Bombay.

931. [1834] *Calamus aromaticus*, Kangra.

932. [9922] Do. Calcutta.

The dried rhizome is employed either in powder or infusion as an aromatic tonic and carminative, in doses of 3iss. Price, 1*s.* per lb.

933. [9926] Mootha (*Cyperus longus*, Calcutta.

934. [6569] Moothoo (*Cyperus rotundus*), Do.

935. [9938] Moothe (*Cyperus rotundus*), Do. KANNY LOLL DEY.

In medicine it is used as tonic and stimulant. In the fresh state given in infusion as a demulcent in fevers, and also used in cases of dysentry and diarrhœa. Dose, gr. v. to gr. xv. Price, 8 annas per lb.

936. [7041] Nagur mootha (*Cyperus pertennis*), Bombay.

937. [1810] Bothesi (*Nardostachys Jatamansi*), Punjab.

An aromatic root, common in the Hills; employed chiefly as an expectorant in cough and colds. Dose, gr. xlv. of the powder. Price, 9*d.* per lb.

A kind of spikenard, imported from Nepal, and is used in scents for its strong odour; it is also used as refrigerant. Dose, gr. v. to 5j. in infusion. Price 6 annas per lb.

938. [5343] Bamboo fungus, Rangoon.

This fungus is formed at the roots of bamboos. It is a favourite vermifuge with the Burmese, and has been used with much success by our own medical officers in their practice. Dose, a piece about the size of a large cherry pounded and administered in any convenient vehicle.*

939. [6428] Bunslochun, Chota Nagpore.

940. [2127] Do. white, Mundla.

941. [2125] Do. pink. Do.

942. [2126] Do. blue, Jubbulpore.

943. [10118] Do., Calcutta. KANNY LOLL DEY.

Found in the hollow bamboo, obtained from the pith of some bamboos. It is said to be found in old wood only, and about one bamboo in three produces it. Used by natives as a stimulant and tonic, in doses of about five grains; though what purpose it can serve would be difficult to understand, as it is a very pure kind of silica or silex. Some of it approaches opal in appearance and composition. Price, 1 rupee 8 annas per lb.†

944. [35*] Massoy bark (cosmetic), New Guinea.

945. [2343] Cosmetic root, Burmah. Messrs. HALLIDAY, FOX & Co.

946. [2342] Pitch wood. Do. Do.

947. [6351] Tuba root (poison), Singapore. COL. COLLYER.

948. [1827] Kanochar or Kanochan, Kangra.

Supposed to be a species of Barrera; used as an aromatic expectorant in doses of gr. xxx.

949. [1858] Bistang or Bartang, Kangra.

An astringent used in diarrhœa and dysentery. Dose of the powder, gr. ij.

950. [6249] Sicilian manna (*Ornus europœa*), Bombay.

Imported into Bombay from the South of Europe.

* Local Committee, *Rangoon.*
† Local Committee, *Jubbulpore.*

NATIONAL ARCHIVES OF INDIA

951. [1864] Shirkhist, Kabul.

The collector states that this is obtained from the *Ononis rotundifolia.* It is found on the plant in small, rounded, reddish grains, and is used by the natives similarly to Sicilian manna. Price, 2*s.* per pound. Dose, ʒj.

DR. ROYLE says:—'*Sheerkhisht,* a kind of manna, is said to be procured from a tree of Khorasan, perhaps a species of *Fraxinus* or *Ornus.*' Perhaps the collector has mistaken *Ornus rotundifolia* for *Ononis rotundifolia,* as the former is a much more probable source than the latter.

952. [1864] Alhagi manna or Taranjibin, Punjab.

A sort of manna found on the *Hedysarum Alhagi,* one of the *Leguminosæ,* produced principally in Kabul. It occurs in unequal, dark brown pieces, of a bitter, sweetish taste, and is mixed with the stalks of the plant on which it is produced. It is used by the natives as a laxative and refrigerant in fever, in doses of ʒj. Price, 1*s.* 6*d.* per pound.

In the latter it is much used as a substitute for sugar. It is imported into India from Kabul and Khorasan.

MISCELLANEOUS.

953. [5189] Essence of Chiretta, Calcutta. Messrs. BATHGATE & Co.

954. [6416] Powder for sore throat, Singapore. TAN KIM SING.

955. [6417] Powder for extracting teeth. Do. Do.

956. [2253] Bremma Dundoo Veray Ennye, an ointment prepared from Argemone seed, Salem. CHEDUMBARA PILLAY.

957. [3746] Kottanguchee Thylum, oil of cocoa-nut shells. Do.

958. [3748] Meza Rajanga Thylum, a mixture of Gingellie, Iloopa, Vappum, Poonga, and Poonnay oils. Do.

959. [3747] Myel Ennye, an ointment of peacock's fat. Salem. CHEDUMBARA PILLAY.

960. [7*] Blistering beetles (*Mylabris,* various sp.), Bombay. DR. BIRDWOOD.

About 180 lbs. forwarded last year by DR. BIRDWOOD, to test the market value in England, were sold at 5*s.* 8*d.* per lb.

961. [10690] Pills for diabetes, Mangalore. V. P. COELHO, Esq.

NATIONAL ARCHIVES OF INDIA

Class III.

SUBSTANCES USED AS FOOD.

Section A.—AGRICULTURAL PRODUCE.

A large and interesting series is exhibited — one which embraces almost every kind of grain used as food in India.

The collection of grains in the ear comprises the following: —

962. [9948] Maize, Mangalore. V. P. Coelho, Esq.

963. [9949] Mulloo Navane. Do. Do.

964. [9950] Save. Do. Do.

965. [9951] White and black Navane. Do. Do.

966. [9952] Raghy. Do. Do.

967. [9953] Samugga paddy. Do. Do.

968. [9954] Maskatta do. Do. Do.

969. [9955] Guddoo Maskatta do. Do. Do.

970. [9956] Kalane white do. Do. Do.

971. [9957] Sangula paddy. Do. Do.

972. [9958] Somasale do. Do. Do.

973. [9959] Kalune red do. Do. Do.

974. [9960] Amate paddy Do. Do.

975. [9961] White Nerrir paddy Do. Do.

976. [9962] Kini bitter paddy Do. Do.

977. [9963] Chokambally do. Do. Do.

978. [9964] Kukuma do. Do. Do.

979. [9965] Jarsali do. Do. Do.

980. [9966] White Maskatta paddy, Mangalore. V. P. Coelho, Esq.

981. [9967] Black paddy Do. Do.

982. [9968] Kojari do. Do. Do.

983. [9969] Paddy (*Oryza sativa*), Eloop-papoo Simba, Madras. Dr. Hunter.

984. [9970] Do. Cada. Do. Do.

985. [9971] Do. Oodicha. Do. Do.

986. [9972] Do. Muvadasu. Do. Do.

987. [9973] Do. Peseme. Do. Do.

988. [9974] Do. Nuroolly Sumba. Do. Do.

989. [9975] Do. Manakata. Do. Do.

990. [9976] Do. Vellay Car. Do. Do.

991. [9977] Do. Vellay Manacartha Car. Do. Do.

992. [9978] Common do. Perrod Car. Do. Do.

993. [9979] Paddy, Koondo Sumba. Do. Do.

994. [9980] Do. Vaday Sumba. Do. Do.

995. [9981] Do. Sumba. Do. Do.

996. [9982] Do. Mathoo Sumba. Do. Do.

NATIONAL ARCHIVES OF INDIA

997. [9983] Paddy, Segapoo Windoo Car. Madras. DR. HUNTER.

998. [9984] Do. Moja Manacartha Car. Do. Do.

999. [9985] Do. Seeroomanee. Do. Do.

1000. [9986] Do. Poompada. Do. Do.

1001. [9987] Do. Pall Sunba. Do. Do.

1002. [9988] Little millet (*Panicum miliaceum*), Shama. Do. Do.

1003. [9989] Italian millet (*P. italicum*), Tenney. Do. Do.

1004. [9990] Raggy (*Eleusine stricta*), Rolla Kevara. Do. Do.

1005. [9991] Little millet (*P. italicum*), Waragoonura var. Do. Do.

1006. [9992] Do. (*P. miliaceum*), Waragoo. Do. Do.

1007-8. [9993-94] Raggy (*Eleusine stricta*), Karawoo or Kehuwaragoo. Do. Do.

1009. [9995] Paddy (*Oryza sativa*), Carapoo Manacartha Car. Do. Do.

1010. [9996] Common paddy (*do.*), Coodum Sumba. Do. Do.

1011. [9997] Paddy (*do.*), Parroon Sumba. Do. Do.

1012. [9998] Do. Muvadasse, blue var. Do. Do.

1013. [9999] Do. Essara Cova. Do. Do.

1014. [10000] Red paddy, Legapoo. Do. Do.

1015. [192] Paddy (*O. sativa*), Sacree Sumba. Do. Do.

1016. [193] Do. Aroonjothee. Do. Do.

1017. [194] Do. Vulloor Sumba. Do. Do.

1018. [195] White Cholum, or great millet (*Sorghum vulgare*). Do. Do.

1019. [196] Cholum, or great millet (*Sorghum vulgare* var.) Do. Do.

1020. [197] Do. var. Do. Do.

1021. [198] Do. var. Do. Do.

1022. [199] Yellow Cholum, or great millet (*Sorghum vulgare* var.), Murja Cholum. Do. Do.

CEREALS.

WHEAT

Is cultivated and employed as an article of food throughout almost the whole of India. The analyses of the samples first entered, as well as those of the other grains which follow, are by the compiler of the present Catalogue.

1023. [55] Wheat, Broach, Bombay.

COMPOSITION.

	Per cent.
Moisture	12·40
Nitrogenous matter	14·68
Starchy matter	69·78
Fatty or oily matter	1·16
Mineral constituents (ash)	1·98
TOTAL	100·00

1024. [56] Wheat (*Triticum vulgare*), Guzerat.

COMPOSITION.

	Per cent.
Moisture	10·88
Nitrogenous matter	13·30
Starchy matter	73·23
Fatty or oily matter	1·29
Mineral constituents (ash)	1·30
TOTAL	100·00

1025. [57] Wheat, Guzerat.

COMPOSITION.

	Per cent.
Moisture	13·28
Nitrogenous matter	13·19
Starchy matter	70·87
Fatty or oily matter	1·20
Mineral constituents (ash)	1·45
TOTAL	100·00

1026. [58] Wheat, Bombay Bazaar.

COMPOSITION.

	Per cent.
Moisture	13·41
Nitrogenous matter	12·84
Starchy matter	70·99
Fatty or oily matter	1·17
Mineral constituents (ash)	1·59
TOTAL	100·00

1027. [59] Wheat, Bombay Bazaar.

COMPOSITION.

	Per cent.
Moisture	13·32
Nitrogenous matter	14·90
Starchy matter	68·54
Fatty or oily matter	1·14
Mineral constituents (ash)	2·10
TOTAL	100·00

NATIONAL ARCHIVES OF INDIA

1028. [60] Wheat, Madras.

COMPOSITION.

	Per cent.
Moisture	10·80
Nitrogenous matter	12·98
Starchy matter	73·51
Fatty or oily matter	1·03
Mineral constituents (ash)	1·68
TOTAL	100·00

1029. [61] Wheat, Calcutta.

COMPOSITION.

	Per cent.
Moisture	11·78
Nitrogenous matter	12·73
Starchy matter	72·58
Fatty or oily matter	1·01
Mineral constituents (ash)	1·90
TOTAL	100·00

1030. [62] Wheat, Bombay Bazaar.

COMPOSITION.

	Per cent.
Moisture	12·56
Nitrogenous matter	14·26
Starchy matter	70·26
Fatty or oily matter	1·06
Mineral constituents (ash)	1.86
TOTAL	100·00

Several of the samples of wheat forwarded on the present occasion were destroyed by weevil: and a number of the other products had suffered from insects to a similar extent.*

The specimens of wheat enumerated below will be found on the stand along with those before named.

1031. [4980] Wheat, grown at Bangalore, Mysore. DR. HUNTER.

1031A. [2368] Do. Chittledroog, Mysore.

1032. [6082] Do. Poona, Bombay.

1033. [2368] Do. Nuggur Division, Mysore.

1034. [6086] Do. Ahmedabad.

1035. [6087] Do. Do.

1036. [9368] Do. Gilghit, N.E. of Peshawur, now being grown experimentally in Punjab.

1037. [1942] Do. Jubbulpore, Bengal.

This beautiful wheat is produced in the Jubbulpore, Nursingpore, and Hoshungabad districts, all along the line of the railway to Bombay. The average selling price at this place is about 30 to 35 seers per rupee (about 2*d.* per bushel), and other descriptions of wheat can be had cheaper.*

1038. [1943] Wheat, Jubbulpore, Bengal.

1038A. [10175] Do. Ulwar. H. H. the MAHARAJAH.

1039. [4790] Do. Rangoon. Messrs. HALLIDAY, FOX & Co.

1040. [6307] Do.† Burmah.

1041. [2808] Do. Madras. DR. SHORTT.

BARLEY

Is extensively grown in the north of India, and occasionally in the hill regions in the south.

1042. [63] Barley (unhusked), Bombay Bazaar.

COMPOSITION.

	Per cent.
Moisture	8·00
Nitrogenous matter	10·94
Starchy matter	77·14
Fatty or oily matter	1·65
Mineral constituents (ash)	2·27
TOTAL	100·00

1043. [64] Barley (husked like pearl-barley), Nepal.

COMPOSITION.

	Per cent.
Moisture	12·90
Nitrogenous matter	11·46
Starchy matter	72·30
Fatty or oily matter	1·25
Mineral constituents (ash)	2·09
TOTAL	100·00

1044. [6084] Barley (*Hordeum hexastichon*), Ahmedabad.

1045. [6910] Do. Calcutta.

1045A. [10176] Do. Ulwar. H. H. the MAHARAJAH.

1046. [6911] Do. Lucknow.

Two kinds of barley are grown in Oude on light soils, and not irrigated. The one kind is called 'Jan,' and is grown everywhere; the other is called 'Dasawree,' and is grown on the banks of rivers. Sown in October. Sells for 2 or 2½ maunds for 1 rupee.‡

OATS

Are not indigenous. Some years ago they were introduced into Patna and Moonghyr,

* With but few exceptions the whole collection of grains from Mysore was destroyed by insects.

* Local Committee, *Jubbulpore.*
† Local Committee, *Rangoon.*
‡ Central Committee, *Lucknow.*

NATIONAL ARCHIVES OF INDIA

but the cultivation is not carried on to any great extent. The sample the analysis of which is given below was not a good specimen.

1047. [65] Oats (*Avena sativa*). Mixed sample from Patna and Moonghyr, 1850.

COMPOSITION.

	Per cent.
Moisture	13·52
Nitrogenous matter	10·13
Starchy matter	68·75
Fatty or oily matter	3·63
Mineral constituents (ash)	3·93
TOTAL	100·00

1048. [7371] Oats, Moonghyr, 1861.

MAIZE (*Zea Mays*)

Extensively cultivated in many parts of India. Only a few representatives are shown.

1049. [69] Maize (*Zea Mays*), Bombay Bazaar.

COMPOSITION.

	Per cent.
Moisture	12·90
Nitrogenous matter	9·23
Starchy matter	74·63
Fatty or oily matter	1·59
Mineral constituents (ash)	1·86
TOTAL	100·00

1049A. [6912] Maize, Midnapore.

1049B. [10177] Do. Ulwar. H. H. the MAHARAJAH.

1049C. [4943] Do. Madras. DR. HUNTER.

1050. [4799] Maize, Burmah. Messrs. HALLIDAY, FOX & Co.

It is common in Burmah. Maize is also extensively cultivated in Oude. The stem and leaves, when dry, are chopped up and given to cattle. The seed is ground for bread, and eaten under the name of *Chabena*. It is sold at 30 seers for the rupee.*

MILLETS

JOWAR, JOWAREE (*Sorghum vulgare*), (*Holcus Sorghum*), INDIAN MILLET. This and the next mentioned species, the *Penicillaria spicata*, or Bajra, constitute the chief grain food of a considerable proportion of the people of India. Taking the country as a whole, it is only the rich or well-to-do classes who can afford to employ rice and wheat. The native names are those which have been attached to the different samples by the exhibitors.

* Central Committee, *Lucknow.*

1051. [66] Jowaree (white) (*Sorghum vulgare*), Patna, Bengal.

COMPOSITION.

	Per cent.
Moisture	12·70
Nitrogenous matter	9·18
Starchy matter	74·53
Fatty or oily matter	1·90
Mineral constituents (ash)	1·69
TOTAL	100·00

1052. [67] Jowaree (red) Bombay Bazaar.

COMPOSITION.

	Per cent.
Moisture	12·00
Nitrogenous matter	9·51
Starchy matter	74·71
Fatty or oily matter	2·15
Mineral constituents (ash)	1·63
TOTAL	100·00

1053. [6080] Jowaree Do. Ahmedabad.

1054. [4940] Mootoo cholum (*Sorghum vulgare*), Madras. DR. HUNTER.

1055. [5004] Cumboo. Do. Do. Do.

1056. [2814] Jowaree (yellow) Madras. DR. SHORTT.

Various samples of this grain from Oude and other parts had become unfit for exhibition.

BAJRA (*Penicillaria spicata; Holcus spicatus*), SPIKED MILLET.

1057. [70] Bajra (*Penicillaria spicata*), Bellary, Madras.

COMPOSITION.

	Per cent.
Moisture	12.40
Nitrogenous matter	10·14
Starchy matter	73·37
Fatty or oily matter	2·20
Mineral constituents (ash)	1·89
TOTAL	100·00

1058. [71] Bajra, Bombay Bazaar.

COMPOSITION.

	Per cent.
Moisture	9·82
Nitrogenous matter	10·90
Starchy matter	74·27
Fatty or oily matter	3·05
Mineral constituents (ash)	1·96
TOTAL	100·00

1059. [72] Bajra, Nandsporé.

COMPOSITION.

	Per cent.
Moisture	11·80
Nitrogenous matter	10·00
Starchy matter	71·45
Fatty or oily matter	4·62
Mineral constituents (ash)	2·13
TOTAL	100·00

NATIONAL ARCHIVES OF INDIA

1060. [106] Bajra, Bengal.

1061. [4060] Do.

1062. [4807] Do. Burmah. Messrs. HALLIDAY, FOX & Co.

Panicum miliaceum, common throughout India.

1063. [73] *Panicum miliaceum*, Bengal.

COMPOSITION.	Per cent.
Moisture	12·00
Nitrogenous matter	12·60
Starchy matter	70·43
Fatty or oily matter	3·62
Mineral constituents (ash)	1·35
TOTAL	100·00

1064. [108] *Panicum miliaceum*, Travancore.

1065. [5003] Chamay (*Panicum miliaceum*), Madras. DR. HUNTER.

1066. [111] Do. Travancore.

1067. [6083] Chenoo (*Panicum miliaceum*), Ahmedabad.

1068. [107] Koda (*Paspalum scrobiculatum*), Travancore.

1069. [113] Do. Benares.

1070. [1967] Do. Bengal.

1071. [2805] Do. Madras. Dr. SHORTT.

1072. [6310] Saurwah (*Panicum frumentaceum*), Bengal.

1073. [5038] Shegapoo Thenee (*Panicum frumentaceum*), Madras.

1074. [6308] Kakum (*Panicum italicum*), Lucknow.

1075. [6085] Do. Ahmedabad.

1076. [6553] Do. Cuttack.

1076A [10183] Do. Ulwar. H. H. the MAHARAJAH.

1077. [5002] Hicana (*Panicum italicum*), Madras. DR. HUNTER.

1078. [74] Millet, called wild rice (*Panicum colorium*), Gaujam.

COMPOSITION.	Per cent.
Moisture	11·96
Nitrogenous matter	9·64
Starchy matter	75·76
Fatty or oily matter	0·60
Mineral constituents (ash)	2·04
TOTAL	100·00

1079. [4051] Little millet (*Panicum miliare*), Madras.

1080. [75] Raggee (*Eleusine coracana*), Bombay Bazaar.

COMPOSITION.	Per cent.
Moisture	11·16
Nitrogenous matter	5·76
Starchy matter	79·94
Fatty or oily matter	0·50
Mineral constituents (ash)	2·64
TOTAL	100·00

1081. [76] Raggee, Bombay Bazaar.

COMPOSITION.	Per cent.
Moisture	12·00
Nitrogenous matter	6·00
Starchy matter	78·69
Fatty or oily matter	1·20
Mineral constituents (ash)	2·11
TOTAL	100·00

1082. [109] Raggee (black), Bombay Bazaar.

1083. [5007] Do. Do. Madras. DR. HUNTER.

1084. [6552] Do. Do. Cuttack.

1085. [4966] Mutlinga pilloo (*Eleusine ægyptiaca*), Madras. DR. SHORTT.

1086. [110] Kiery (*Amaranthus frumentaceus*).

1087. [6309] Kiery (*Amaranthus anardhana*), Lucknow.

1088. [7485] Kiery Rajura (*A. anardhana*), Ahmedabad.

RICE (*Oryza sativa*).

This is the favourite food-grain of the people; but, except in Arracan, and a few other districts, in which it constitutes the chief and almost only article cultivated, its use is confined to the richer classes throughout the country.

The extent to which it is exported from India to this and other countries will be gathered from an inspection of the Table pp. 50 and 51. A very large collection of paddy (rice in the husk) and cleaned rice has been forwarded on the present occasion. The space at disposal has, however, only admitted of the exhibition of the following samples:—

NATIONAL ARCHIVES OF INDIA

QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE OF RICE EXPORTED

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER															
		UNITED KINGDOM		FRANCE		OTHER PARTS OF EUROPE		AMERICA		CHINA		ARABIAN AND PERSIAN GULFS		ADEN AND AFRICA		CAPE OF GOOD HOPE	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£
1850-51	Bengal. . .	84,762	95,277	6,597	7,578	6,632	5,665	5,076	4,328	7,228	6,223	59,533	48,408	..	..	3,550	5,446
	Madras . .	47,894	36,190	6,941	5,817	..	..	..	..	..	..	58,576	54,589	..	..	328	275
	Bombay . .	77	165	..	..	..	..	..	..	5	10	14,751	25,632	2,788	4,373	..	..
	ALL INDIA .	132,733	131,632	13,538	13,395	6,632	5,665	5,076	4,328	7,233	6,233	132,860	128,629	2,788	4,373	5,878	5,721
1851-52	Bengal. . .	82,674	82,965	4,418	5,268	12,426	10,038	6,485	5,725	1,936	1,652	47,407	42,768	..	..	14,419	15,513
	Madras . .	29,761	22,363	2,224	1,934	..	..	..	..	..	..	93,362	85,583	..	..	6,057	5,196
	Bombay . .	..	..	..	..	..	..	..	..	7	12	9,584	16,553	2,145	4,003	..	..
	ALL INDIA .	112,435	105,328	6,642	7,202	12,426	10,038	6,485	5,725	1,943	1,664	150,493	144,904	2,145	4,003	20,476	20,709
1852-53	Bengal. . .	107,922	113,574	16,124	17,553	2,650	2,749	9,914	7,931	3,827	3,570	49,616	41,188	..	..	5,018	4,843
	Madras . .	89,015	63,533	13,357	10,068	..	..	..	..	..	..	71,077	64,956	..	..	..	..
	Bombay . .	..	..	..	..	..	..	..	..	7	13	9,858	17,517	4,888	9,576	..	..
	ALL INDIA .	196,937	177,107	29,481	27,621	2,650	2,749	9,914	7,931	3,834	3,583	130,551	123,661	4,888	9,576	5,018	4,843
1853-54	Bengal. . .	847,116	328,665	57,210	50,657	70,610	55,608	3,620	2,127	38,783	15,559	49,753	33,334	4,966	3,005	8,116	5,542
	Madras . .	79,875	80,678	13,883	11,720	..	..	..	..	3,345	2,040	83,861	91,272	..	..	7	12
	Bombay . .	1,052	1,596	..	..	..	..	..	..	1	1	9,034	13,615	10,576	16,084	..	..
	ALL INDIA .	928,043	410,939	71,093	62,377	70,610	55,608	3,620	2,127	42,129	17,601	142,648	138,221	15,542	19,089	8,123	5,554
1854-55	Bengal. . .	11,507,584	538,959	1,982,248	73,819	2,204,936	114,783	144,889	5,024	342,561	13,276	1,448,292	53,730	5,228	2,520	192,096	7,773
	Madras . .	21,508	21,270	7,882	6,041	..	..	..	..	..	..	80,914	99,275	..	..	8	14
	Bombay . .	1,477	2,240	..	..	..	..	..	..	82	117	31,458	21,700	5,101	7,862	..	..
	ALL INDIA .	11,530,569	562,469	1,990,130	79,860	2,204,936	114,783	144,889	5,024	342,643	13,393	1,560,664	174,705	10,329	10,382	192,104	7,792
1855-56	Bengal. . .	13,936,612	1,181,079	3,736,701	192,736	1,169,815	169,947	257,908	10,211	2,063,521	87,209	1,177,860	48,755	49,022	1,672	227,361	8,954
	Madras . .	111,308	82,975	47,204	39,427	..	..	2,283	1,696	2,296	3,850	71,125	90,454	5	6	..	..
	Bombay . .	2,784	4,107	885	1,343	34	52	..	..	332	504	19,449	26,597	3,286	4,978	..	..
	ALL INDIA .	14,050,704	1,268,161	3,784,790	233,506	1,169,849	169,999	260,191	11,907	2,066,149	91,563	1,268,434	165,806	52,313	6,656	227,361	8,954
1856-57	Bengal. . .	7,436,159	662,096	1,800,688	162,281	236,196	41,279	251,700	14,954	4,611,622	224,453	1,689,480	88,969	14,060	3,828	312,556	17,654
	Madras . .	102,420	86,260	18,966	17,129	100	129	..	..	..	..	40,077	52,546	562	818	16	21
	Bombay . .	..	..	..	..	..	..	..	..	3,381	3,315	17,906	27,267	4,744	7,320	..	..
	ALL INDIA .	7,538,579	748,356	1,819,654	179,410	236,296	41,408	251,700	14,954	4,615,003	227,768	1,747,463	168,782	19,366	11,966	312,572	17,675
1857-58	Bengal. . .	5,392,635	1,181,419	906,807	135,397	93,552	41,556	391,368	31,541	3,515,860	593,595	1,676,842	111,844	113,750	6,548	344,249	25,568
	Madras . .	126,663	102,717	13,672	11,098	1,698	1,553	..	..	..	..	50,146	76,675	..	..	..	..
	Bombay . .	..	..	..	..	1,892	2,867	..	..	3,757	5,619	11,947	11,906	5,796	7,872	..	..
	ALL INDIA .	5,519,298	1,284,136	920,479	146,495	97,142	45,976	391,368	31,541	3,519,617	599,214	1,738,935	200,425	119,546	14,424	344,249	25,568
1858-59	Bengal. . .	496,893	461,662	13,748	14,891	161	219	28,468	44,792	168,966	159,944	113,357	156,944	6,224	9,586	1,457	23,356
	Madras . .	34,891	22,412	21,261	13,164	..	..	..	..	1,713	2,230	36,271	64,717	279	414	..	..
	Bombay . .	..	..	..	..	..	..	..	..	245	371	9,150	13,539	4,342	6,569	..	..
	ALL INDIA .	531,784	484,074	35,009	28,055	161	219	28,468	44,792	170,924	162,545	158,778	235,200	10,845	16,569	1,457	23,356
1859-60	Bengal. . .	499,920	518,799	18,571	24,691	17,663	7,171	20,027	31,792	44,261	44,654	101,854	146,975	35,375	7,401	16,740	33,197
	Madras . .	57,379	46,589	11,243	9,477	..	..	..	..	43	89	34,678	66,537	928	1,762	..	..
	Bombay . .	..	..	..	..	..	..	..	..	70	117	9,656	14,792	2,314	3,533	..	..
	ALL INDIA .	557,299	565,388	29,814	34,168	17,663	7,171	20,027	31,792	44,374	44,860	146,188	228,304	38,617	12,696	16,740	33,197
1860-61	Bengal. . .	838,196	769,060	49,206	83,441	31,300	27,824	20,468	6,886	128,962	134,696	135,153	131,527	77,964	15,958	13,371	22,089
	Madras . .	54,602	38,339	31,805	25,918	..	..	..	..	99	155	44,604	84,892	583	1,080	33	50
	Bombay . .	1,796	3,476	..	..	..	..	..	..	70	132	31,945	49,396	4,154	6,231	..	..
	ALL INDIA .	894,594	810,875	81,011	109,359	31,300	27,824	20,468	6,886	129,131	134,983	211,702	265,815	82,701	23,269	13,374	22,089

NATIONAL ARCHIVES OF INDIA

FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850-51 TO 1860-61.

EXPORTED

CEYLON		MAURITIUS AND BOURBON		NEW SOUTH WALES		STRAITS SETTLEMENTS		TURKEY		WEST INDIES		OTHER PARTS		TOTAL EXPORTED TO ALL PARTS	
Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£	qrs.	£
5,607	3,417	141,311	119,467	1,228	1,253	9,463	7,669	..	..	3,006	2,405	5,361	4,367	341,352	311,503
245,545	190,648	28,210	23,017	164	138	1,137	947	..	..	20,087	15,890	3,631	3,023	412,463	330,534
18	29	..	..	..	..	..	..	..	..	..	..	118	192	17,757	30,401
251,170	194,094	169,521	142,484	1,392	1,391	10,600	8,616	..	..	23,043	18,295	9,110	7,582	771,572	672,438
1,201	5,175	163,432	140,873	4,434	5,520	6,622	6,518	..	..	4,114	3,322	4,081	4,960	353,649	330,297
336,008	236,449	75,914	62,926	1,636	1,496	1,353	1,218	..	..	7,223	6,628	1,370	1,178	555,048	424,371
13	27	325	638	..	..	3	5	..	..	..	..	781	1,125	12,858	22,363
337,222	241,651	239,671	204,437	6,070	7,016	7,978	7,741	..	..	11,337	9,350	6,232	7,263	921,555	777,031
5,965	3,780	220,586	135,456	10,600	10,184	8,031	6,947	..	..	3,213	2,870	5,430	4,363	448,296	355,008
301,251	221,923	64,101	51,146	196	179	2,038	1,742	..	..	7,247	6,464	1,138	733	549,420	420,744
8	16	..	..	56	112	..	..	..	..	..	..	1,020	1,484	15,837	28,718
307,224	225,719	284,687	186,602	10,852	10,475	10,069	8,689	..	..	10,460	9,334	7,588	6,580	1,013,553	804,470
143,939	5,588	265,267	155,649	6,142	4,543	343,376	69,882	..	..	31,820	20,347	60,707	6,852	1,931,425	757,358
255,104	206,300	67,290	68,313	34	54	2,523	2,354	..	..	5,370	9,004	546	505	511,838	472,252
10	16	21	32	..	..	..	..	..	..	..	..	442	552	21,136	31,896
399,053	211,904	332,578	223,994	6,176	4,597	345,899	72,236	..	..	37,190	29,351	61,695	7,909	2,464,399	1,261,506
582,497	18,911	4,304,316	159,883	236,562	8,557	2,245,595	105,518	..	..	834,332	30,630	673	482	26,431,809	1,143,870
248,361	226,582	29,260	30,241	354	593	261	259	..	..	405	680	507	803	389,460	385,758
48	74	..	..	..	..	1	1	..	..	..	..	622	698	39,789	32,692
830,906	245,567	4,333,576	190,124	236,916	9,150	2,245,857	105,778	..	..	834,737	31,310	1,802	1,983	26,861,058	1,562,320
819,230	29,585	5,170,340	213,895	642,756	23,166	1,067,117	74,566	..	..	786,500	28,398	338,049	11,175	31,442,792	2,081,348
289,640	240,060	17,355	17,759	..	..	914	942	..	..	836	700	804	835	543,767	478,704
..	..	38	57	..	..	..	..	..	..	..	..	853	62	27,661	38,694
1,108,870	269,645	5,187,733	231,711	642,756	23,166	1,068,031	75,508	..	..	787,336	29,098	339,706	12,072	32,014,220	2,598,746
770,936	30,729	6,667,617	303,838	785,872	69,432	1,207,292	91,019	..	..	1,633,948	71,104	554,957	15,964	27,773,083	1,797,600
295,585	253,053	15,299	14,718	..	..	316	288	30,641	38,544	1,542	940	182	66	505,706	464,512
..	..	52	80	..	..	..	..	..	..	..	..	840	1,089	26,923	39,071
1,066,521	283,782	6,682,968	318,636	785,872	69,432	1,207,608	91,307	30,641	38,544	1,635,490	72,044	555,979	17,119	28,305,712	2,301,183
446,776	27,459	5,412,321	410,699	608,123	51,203	1,055,395	232,969	..	..	552,394	38,853	114,617	14,492	20,624,689	2,903,143
288,468	243,995	38,381	37,376	180	187	4,926	5,018	22,175	33,708	3,277	2,997	2,110	114	549,696	515,438
289	438	215	281	..	..	85	129	..	..	..	..	1,274	1,480	25,255	30,592
735,533	271,892	5,450,917	448,356	608,303	51,390	1,060,406	238,116	22,175	33,708	555,671	41,850	118,001	16,086	21,199,640	3,449,173
22,428	164,956	320,298	507,645	96,935	158,480	290,792	260,906	..	..	32,940	46,300	21,008	17,303	1,613,675	2,026,984
236,423	229,119	34,750	34,863	23	42	1,116	1,170	6,884	12,395	1,230	1,875	107	177	374,948	382,578
64	97	1,164	1,764	..	..	..	..	..	..	..	..	1,079	1,244	16,044	23,584
258,915	394,172	356,212	544,272	96,958	158,522	291,908	262,076	6,884	12,395	34,170	48,175	22,194	18,724	2,004,667	2,433,146
95,959	66,035	376,044	511,526	84,758	139,912	248,667	112,650	..	..	38,341	135,022	184,845	35,309	1,788,025	1,815,134
287,440	258,186	33,287	38,355	3	5	489	497	7,628	14,912	3,974	4,405	7	11	437,099	440,825
..	..	77	117	..	..	..	..	..	..	..	..	623	1,777	13,740	20,336
383,399	324,221	409,408	549,998	84,761	139,917	249,156	113,147	7,628	14,912	42,315	139,427	185,475	37,097	2,233,864	2,276,295
290,906	123,250	420,080	483,175	60,941	103,432	460,673	63,903	..	..	29,197	37,741	281,695	27,191	2,838,082	2,030,123
340,598	314,031	83,457	89,274	..	..	306	312	11,966	22,018	4,280	5,812	271	446	572,604	582,327
15	23	5	10	..	..	2	4	..	..	..	..	1,041	1,618	39,028	60,890
631,519	437,304	503,542	572,459	60,941	103,432	460,981	64,219	11,966	22,018	33,477	43,553	283,007	29,255	3,449,714	2,673,340

NATIONAL ARCHIVES OF INDIA

1089. [77] Rice (*Oryza sativa*), Pegu. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	13·50
Nitrogenous matter	7·41
Starchy matter	78·10
Fatty or oily matter	0·40
Mineral constituents (ash)	0·59
TOTAL	100·00

1090. [78] Rice, Bombay Bazaar. Do.

COMPOSITION.

	Per cent.
Moisture	13·00
Nitrogenous matter	7·44
Starchy matter	77·63
Fatty or oily matter	0·70
Mineral constituents (ash)	1·23
TOTAL	100·00

1091. [79] Rice, Broach, Bombay. Do.

COMPOSITION.

	Per cent.
Moisture	13·10
Nitrogenous matter	7·12
Starchy matter	78·70
Fatty or oily matter	0·49
Mineral constituents (ash)	0·66
TOTAL	100·00

1092. [81] Rice, Bareilly. Do.

COMPOSITION.

	Per cent.
Moisture	12·80
Nitrogenous matter	8·24
Starchy matter	77·80
Fatty or oily matter	0·64
Mineral constituents (ash)	0·52
TOTAL	100·00

1093. [80] Pulut rice, Malacca. Do.

COMPOSITION.

	Per cent.
Moisture	12·90
Nitrogenous matter	7·24
Starchy matter	78·56
Fatty or oily matter	0·60
Mineral constituents (ash)	0·70
TOTAL	100·00

1094. [82] Rice, Arracan. Do.

1095. [83] Do., Bengal. Do.

From Arracan, which exports rice to a larger extent than any other district, the undermentioned samples and information are forwarded by the Local Committee at *Akyab.*

1096. [9253] Lak-taw-ree-tha-jung-thau, Akyab.

1097. [9254] Gua-kreen-thee, Akyab.

1098. [9255] Loong-phroo, Akyab.

1099. [9256] Lak-roong, Akyab.

1100. [9257] Toung-phroo, Akyab.

1101. [9258] Byah, Akyab.

Nos. 9253–9258 are exported: No. 9254 in very large quantities; Nos. 9255, 9257, and 9258 are varieties of No. 9254, 'Gua-kreen-thee.' It is not possible to state the quantity exported of each. Previous to 1845–46, Nos. 9253 and 9256, Lak-taw-ree and Lak-roong, were more extensively grown than Gua-kreen-thee, as they were preferred in China, in the Straits, and Coast markets, but Gua-kreen-thee being preferred in the European markets, and their yield per acre being greater, it has almost entirely supplanted the other kinds. The quantity produced may be estimated at, 'Gua-kreen-thee,' and varieties, 200,000 tons, and Lak-roong and Lak-taw-ree at 20,000 tons. Last year 125,000 tons rice were exported from Arracan, of which not more than about 5,000 tons were Lak-roong and Lak-taw-ree. The average annual export of rice from Arracan, during the last eight years, has been, to Europe 112,000 tons, to the East and Indian ports about 4,000 tons. The wholesale price of rice varies considerably, according with the demand: formerly it might be purchased at from 2*l.* 10*s.* to 3*l.* 10*s.* the ton. The average rate, for the last ten years, may be set down at 5*l.* per ton. In consequence of the rise in the price, China and other Eastern countries have been nearly driven out of the market.

With regard to the desirability of endeavouring to cause an extension of the cultivation of any particular kind of rice, the natives will readily see which gives the best return, and there being a very large extent of waste land in this province, were it desirable, with increase of population, the cultivation of rice might be increased ten-fold; but taking the population into consideration, the export of rice from Arracan is very great, owing, no doubt, to the excellent water-communication throughout the province: could, however, the inhabitants be induced to cultivate other articles to a greater extent than is now done, such as cotton, jute, tea, &c., it would be very desirable.

Most of the information contained in the above has been furnished by J. BULLOCK, Esq., of the firm of Messrs. Halliday, Bullock & Co., of Akyab, Member of the Akyab Committee.

The specimens of rice submitted are of last year's produce, and are consequently not of as good colour as if they were of this year's produce.*

1102. [5732] Rice, Kurak-thor, Akyab.

1103. [9259] Paddy (rice in the husk), Akyab.

1104. [5733] Gua-mounk-way, Akyab.

1105. [5736] Lak-taw-ree-tha-jung-thau, Akyab.

1106. [5735] Gua-kreen-thee, Akyab.

1107. [5737] Loong-phroo, Akyab.

1108. [9260] Lak-roon, Akyab.

1109. [5734] Toung-phroo, Akyab.

* Local Committee, *Akyab.*

NATIONAL ARCHIVES OF INDIA

1110. [9261] Byah, Akyab.

PADDY (*Rice in Husk*) *from* **Moulmein.**

1111. [6292] Paddy, Ahphet or Koukgyee, Moulmein.

This grain is cultivated in June, and reaped in December. This is the daily food of the people.

1112. [6286] Paddy, Shangalay, Moulmein.

1113. [6285] Do., Konk Yen, Do.

The sowing of rice takes place in June, and it is reaped in October; it is very quick in its growth, and requires little culture.

1114. [6306] Paddy, Konk Mhoag, Moulmein.

1115. [6297] Do., Nhat Tsa Bah, Do.

1116. [6287] Do., Yahine, Do.

1117. [6289] Do., Wetssee, Do.

1118. [6288] Do., Thootpaya, Do.

1119. [6296] Do., Than Bah, Do.

1120. [6284] Do., Konk Mhoag, Do.

1121. [6280] Do., Khakabong, Do.

1122. [9262] Do., Tsankouk Ngen, Do.

1123. [6278] Do., Konk Ya, Do.

1124. [6305] Do., Na Kheit, Do.

1125. [6281] Do., Toung Byan, Do.

1126. [6279] Do., Tsa Tha, Do.

1127. [9263] Do., Ain Thee, Do.

1128. [6291] Do., Yui Gnay, Do.

1129. [6293] Do., Toung Aw, Do.

1130. [6303] Do., Tsin Soay, Do.

1131. [9264] Do., Nga Tin Thoay, Do.

1132. [6302] Do., Kyet Thai, Do.

1133. [9265] Do., Thakapheit, Do.

1134. [6300] Do., Tsin Thee, Do.

1135. [6298] Do., Gkakha Yine, Do.

1136. [6282] Do., Nnagkheit Nhet, Do.

1137. [6299] Do., E—thine, Do.

1138. [6283] Do., Thetkouppan, Do.

1139. [6290] Do., Gkalaon, Do.

1140. [9266] Do., Myai-thuay, Do.

All the varieties of rice in these provinces are sown in May or June at the setting in of the south-west monsoon; some are cultivated in high land, and others in low land.

A few samples showing the extremes of quality of the rices produced in the Cuttack district have been forwarded, accompanied with the remarks by the Local Committee here appended:—

Rice is the staple of this division. It is used for food for man, beast, and bird; for the manufacture of starch, the distillation of spirits, &c. Its varieties are as numerous as its uses. There are in this province three distinct crops; the first, grown on somewhat high ground, is the early crop, sown for the most part in June, and reaped in August and September. The second is the main crop, sown in June and July, and cut from November to January. It requires a great deal of moisture, some varieties growing in several feet of water. The third is a dwarf crop, cultivated in the months of March, April, and May, on low-lying land, generally on the sides of marshes and pools, where irrigation is easy. The ratio of productiveness is said to be, in a good season, as 1 to 35. The market value of this grain varies so much according to locality and season, as is indeed the case with all other raw products of this part of the country, that it would only tend to mislead to give any rates purporting to be of general application.

1141. [5738] Rice in the husk, Meeshay, Rangoon.

1142. [5746] Do. Natsieng, Do.

1143. [5749] Cargo rice husked by the Oriental Rice Company's steam mill. Do.

1144. [5745] Cleaned rice, Natsieng, dressed by the Burmese, Do.

1145. [5750] Do. dressed by the Oriental Rice Company's mill, Do.

1146. [5747] Rice in the husk, Meedo, Do.

1147. [5748] Cargo rice husked by the Oriental Rice Company's mill, Do.

1148. [6275] Cleaned rice dressed by the Oriental Rice Company's mill, Do.

1149. [5741] Rice in the husk, Beeat, Do.

1150. [6276] Do. black rice, Do.

1151. [5744] Do. 'winged' rice, Do.

1152. [5742] Cleaned rice, red Koungnyeen (*Oryza glutinosa*), Do.

1153. [5743] Rice in the husk, white Koungnyeen (*O. glutinosa*), Do.

1154. [5740] Cleaned rice, white Koungnyeen, Do.

The Burmese recognise nearly a hundred varieties of rice, but the principal distinctions between the different kinds are as follows:—Hard grain, soft grain, glutinous rice.

The 'Natsieng' is the hardest grain, and is the rice which is accordingly principally exported to Europe.

The 'Meedo' is the chief of the soft grain varieties.

NATIONAL ARCHIVES OF INDIA

It is much preferred by the Burmese to the hard-grained sorts, and it is certainly superior in taste when cooked; but the hard-grained rice is chiefly purchased by the merchants for export, as it keeps better, and the soft-grained rice is too much broken by European machinery in cleaning. Latterly, on the Continent, this last objection appears to have been overcome, and a greater demand is consequently springing up for the 'Meedo' rice for the markets of foreign Europe.

The 'Koungnyeen,' or hill rice, is called 'glutinous' rice by Europeans, from the property it possesses, when cooked, of the grains all adhering in a thick glutinous mass. It is the chief article of food with the Karens and other hill tribes, but is not much eaten by the inhabitants of the low swampy plains, where the common rice is grown.

Nos. 5749, 5750, 5748, and 6275, have been husked and cleaned respectively by the steam mills erected at Rangoon by the Oriental Rice Company.

Price of rice in the husk 50 rupees per 100 baskets of 52 lbs.

Cargo rice 95 rupees per 100 baskets of 63 lbs.

Cleaned rice 150 rupees per 100 baskets of 70 lbs.

Of the special collection furnished by Messrs. HALLIDAY, FOX & Co., the undermentioned samples are exhibited:—

1155. [4210] Baw-gyn.

1156. [4211] Shwai thway, Burmah.

1157. [4213] Tha-za, Do.

1158. [4214] Cargo thang-bong, Do.

1159. [4217] Na-pangyu-cow nyeing, Do.

1160. [4219] Tha-za, Do.

1161. [4231] Mian ma kla dow, Do.

1162. [4233] Kya-nee-young, Do.

1163. [4234] Cow nyien ka nghet (glutinous rice), Do.

1164. [4247] Tann dwing, Do.

1165. [4819] Necranzie, Do.

1166. [4824] Byack, Arracan.

1167. [4825] Do. Do.

LIEUT. W. PHAIRE, Deputy-Commissioner, Assam, sends a large collection, of which the subjoined are a few representatives:—

1168. [6277] Rice, unshelled, Durrung, Assam.

1169. [6758] Do. shelled, Hukcoahbac, Do.

1170. [6796] Do. unshelled (Paddy), Kuchareehalle, Do.

1171. [6797] Do. shelled, do. Do.

1172. [6775] Do. unshelled, Bugaguha, Do.

1173. [6776] Do. shelled, do. Do.

1174. [6781] Rice, unshelled, Homzul, Assam.

1175. [6782] Do. shelled, do. Do.

1176. [6794] Do. unshelled, Hurra Pooa, Do.

1177. [6795] Do. shelled, do. Do.

1178. [6770] Do. unshelled, Burhooagmony, Do.

1179. [6771] Do. unshelled, Dulkoosee, Do.

1180. [6772] Do. shelled, do. Do.

1181. [6752] Do. unshelled, Maneekeemadoovy, Do.

1182. [6751] Do. shelled, do. Do.

Of the specimens of rice forwarded by the Central Committee, Allahabad, the following are exhibited:—

1183. [6856] Rice, Bansmuttee, Philibheet District, Rohilcund.

1184. [6850] Do. Dhanee, Do.

1185. [6853] Do. Roymoonia, Do.

1186. [6857] Do. Gantanee, Do.

1187. [6868] Do. Hirrunj, Do.

1188. [6861] Do. Rutnee, Do.

1189. [6848] Do. Surhee, Do.

1190. [6862] Do. Hunsa, Do.

1191. [6867] Do. Hunsraj, Do.

1192. [6859] Do. Bunkhee, Do.

1193. [6866] Do. Jhilma, Do.

1194. [6872] Do. Sammaloo, Do.

The collection forwarded from Lucknow comprises the following:—

1195. [6817] Dhan (*Oryza sativa*), Lucknow, Oude.

Eighteen seers per rupee. Grows all over Oude extensively. This is considered as one of the best sorts of rice, and is produced from the *bateesa* paddy.

1196. [6818] Dhan (*O. sativa*), Lucknow, Oude.

Twenty seers per rupee. Grows all over Oude. This is considered a superior kind, and produces a white rice called *bateesa*.

1197. [9267] Dhan (lamba) (*O. sativa*), Lucknow, Oude.

Sixteen seers per rupee. Grows all over Oude extensively. This is also a superior kind, and is called *lamba chawl*.

NATIONAL ARCHIVES OF INDIA

1198. [6819] Kala Dhan (*Oryza sativa*), Lucknow, Oude.

Twenty-five seers per rupee. Grows all over Oude. This is a specimen of brown rice produced from the black paddy; it is an inferior kind, and used by the poorest people; it is called *bagree chawl.**

1199. [6816] Dhan (lamba) (*O. sativa*), Lucknow, Oude.

Twenty seers per rupee. Grows all over Oude extensively. This is considered one of the good kinds of paddy, and produces the long white rice.

1200. [6820] Dhan (*O. sativa*), Lucknow, Oude.

Twenty-eight seers per rupee. Grows all over Oude. This is an inferior kind of paddy, and produces, when husked, a reddish rice; the natives call this kind *bagree.*

Very many varieties of rice are grown in Oude. A heavy soil and plenty of water suits them best. There are five kinds which are considered among the best; 'Mihee' and 'Bansee' are foremost. The peculiarity in the cultivation of these two kinds is, that they are transplanted and placed about 5 inches apart. And, by this method, if the soil is good, they grow to the height of an ordinary sized man, and produce a much larger quantity than if otherwise treated. The odour and flavour of these two kinds, when cooked, are superior to those of any other kind. They are only used by those who can afford to buy them.

As the labour in cultivating them makes them dearer than the other sorts, the three other varieties which are considered good are the 'Bateesa,' the '——' and the 'Phool-Biring.' They are sown broad-cast in June, and left so, and they are the kinds mostly used by natives. The first two mentioned, when new, sell for 10 or 12 seers per rupee, and become dearer according as they become older. The other three kinds sell for about 19 seers per rupee, and are dearer if older. Some consider 'Phool-Biring' the best, as it swells in boiling, and has an agreeable odour.*

The collection of rices from Chota Nagpore, as forwarded by the Local Committee there, is partly represented by the following:—

1201. [6883] Rice, Pershad Chogdan, first sort, Chota Nagpore.

1202. [6884] Rice, Shamzeerer Dhan, Do.

1203. [6885] Rice, Rajnath Dhan, Do.

1204. [6886] Rice, Seetul Cheenie Dhan, Do.

1205. [6887] Rice, Sikhee Dhan, Do.

1206. [6888] Rice, Ramghurria Dhan, Do.

1207. [6889] Rice, Chundunphul Dhan, Do.

1208. [6890] Rice, Kussoor Sal Dhan, Do.

1209. [6891] Rice, Gehu Hurree, Do.

1210. [6892] Rice, Raichoonee Doshawdar Dhan, Do.

1211. [6893] Rice, Siree Kumul, Chota Nagpore.

1212. [6894] Rice, Chundunphul Dhan, Do.

1213. [6895] Rice, Bansmuttee Dhan, Do.

From Madras the following examples, selected from the collections forwarded by Drs. Hunter and Shortt, and also from that procured from Mr. R. Brown, by Surgeon-Major Edward Balfour, are exhibited:—

1214. [4045] Rice (*Oryza sativa*), Seeroomanen aresee, Madras.

1215. [4046] Rice, Hoonda sumba aresee, Do.

1216. [4048] Rice, Coodum sumba aresee, Do.

1217. [4048] Rice, Paswell, Do.

1218. [4054] Rice, Seeraga sumba, Do.

1219. [4056] Rice, Peroo car aresee, Do.

1220. [4057] Rice, Segapoo aresee, Do.

1221. [4061] Rice, Nelloo var. Monakata, Do.

1222. [4248] Rice, Medong Cargo, Do.

1223. [4979] Rice, Red aresee, Do.

1224. [4982] Rice, Majay aresee, Do.

1225. [4984] Rice, Carah aresee, Do.

1226. [4985] Rice, Piegoh aresee, Do.

1227. [4986] Rice, Baulah aresee, Do. DR. HUNTER.

1228. [4988] Rice, Pootoo aresee, Do. Do.

1229. [4989] Rice, Pallow aresee, Do. Do.

1230. [4990] Rice, Curpoo pootoo aresee, Do. Do.

1231. [4991] Rice, Car aresee, Do. Do.

1232. [4992] Rice, Chodum Chumbah, Do. Do.

1233. [4994] Rice, Kaddy Khythan, Do. Do.

1234. [4999] Rice, Palin Chumbah, Do. Do.

Rice is not extensively cultivated in the Bombay Presidency. The following are examples from Poonah and Ahmedabad.

1235. [7410] Rice (*Oryza sativa*), Chowl Dakosal, Poonah.

1236. [7411] Rice, Chowl Bhasud, Do.

1237. [7412] Rice, Chowl Dhowlasal, Do.

* Local Committee, *Lucknow.*

NATIONAL ARCHIVES OF INDIA

1238. [7413] Rice, Chowl Umbemoher, Poonah.

1239. [7415] Rice, Bhat Danger allahurry, Ahmedabad.

1240. [7416] Rice, Bhat Danger satee, Do.

1241. [7417] Rice, Bhat Camood, Do.

1242. [7418] Rice, Bhat Danger pakalee, Do.

1243. [7419] Rice, Bhat Danger satee sat, Do.

PULSES.

Pulses occupy an important position in the food vocabulary of the people of India. They are eaten with, and supply to rice, and some other cereals, the nitrogenous or 'flesh-forming' material in which these are defective.

Of the PEA TRIBE, Gram (*Cicer arietinum*), or chick pea, occupies an important position. It is largely used by the people, and constitutes, besides, the chief horse-food of Northern and Western India. It can be used for this purpose for a length of time without causing 'heating,' or the other deleterious effects ordinarily produced by the too exclusive employment of peas and beans in this country.

A comparison of the various analyses which follow will show that the proportion of nitrogenous or 'flesh-forming' matter in *gram* is, with one exception, *less* than in any of the other pulses enumerated:—

1244. [84] Gram, (*Cicer arietinum*), Bengal. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	10·80
Nitrogenous matter	19·32
Starchy matter	62·20
Fatty or oily matter	4·56
Mineral constituents (ash)	3·12
TOTAL	100·00

1245. [85] Gram, Bombay Bazaar. Do.

COMPOSITION.

	Per cent.
Moisture	12·24
Nitrogenous matter	18·05
Starchy matter	61·70
Fatty or oily matter	4·95
Mineral constituents (ash)	3·05
TOTAL	100·00

1246. [86] Gram, Bombay. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	10·86
Nitrogenous matter	21·17
Starchy matter	60·11
Fatty or oily matter	4·47
Mineral constituents (ash)	3·39
TOTAL	100·00

1247. [87] Gram, Bombay Bazaar. Do.

COMPOSITION.

	Per cent.
Moisture	9·25
Nitrogenous matter	20·64
Starchy matter	63·62
Fatty or oily matter	4·11
Mineral constituents (ash)	2·38
TOTAL	100·00

1248. [88] Gram, Bombay. Do.

COMPOSITION.

	Per cent.
Moisture	10·80
Nitrogenous matter	21·23
Starchy matter	60·30
Fatty or oily matter	4·77
Mineral constituents (ash)	2·90
TOTAL	100·00

1249. [90] Gram (husked), Madras. Do.

COMPOSITION.

	Per cent.
Moisture	11·30
Nitrogenous matter	21·04
Starchy matter	60·45
Fatty or oily matter	4·31
Mineral constituents (ash)	2·90
TOTAL	100·00

1250. [91] Gram (white variety), Saharunpore. Do.

COMPOSITION.

	Per cent.
Moisture	12·20
Nitrogenous matter	20·13
Starchy matter	60·24
Fatty or oily matter	4·63
Mineral constituents (ash)	2·80
TOTAL	100·00

1251. [6081] Chenna peela (*Cicer arietinum*), Ahmedabad.

1252. [4032] Chick pea (*C. arietinum*), Madras.

1253. [5039] Chick pea.

1254. [4032] Chick pea (husked,) Madras. MR. R. BROWN.

1254A. [2813] Chick pea, Madras. DR. SHORTT.

1255. [89] Gram, husked, (*C. arietinum*).

NATIONAL ARCHIVES OF INDIA

1256. [4805] Gram, Burmah. Messrs. HALLIDAY, FOX & Co.

PIGEON PEA (*Cajanus indicus*).

This pea is a particular favourite. When husked and split, it constitutes the kind of 'dhol' which, when procurable, most commonly enters with rice into the formation of the vegetable curry of the Hindoo.

The three samples which follow show its composition. The others are a portion of those forwarded for exhibition on the present occasion.

1257. [92] Pigeon pea, Jaffrabad, Bombay. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	10·77
Nitrogenous matter	20·19
Starchy matter	64·32
Fatty or oily matter	1·32
Mineral constituents (ash)	3·40
TOTAL	100·00

1258. [93] Pigeon pea, Calcutta Bazaar. Do.

COMPOSITION.

	Per cent.
Moisture	12·80
Nitrogenous matter	20·38
Starchy matter	61·90
Fatty or oily matter	1·52
Mineral constituents (ash)	3·40
TOTAL	100·00

1259. [96] Pigeon pea (husked), Broach. Do.

COMPOSITION.

	Per cent.
Moisture	12·30
Nitrogenous matter	19.83
Starchy matter	63·12
Fatty or oily matter	1·86
Mineral constituents (ash)	2·89
TOTAL	100·00

1260. [4934] Thoraray (*Cajanus indicus*), Madras. DR. HUNTER.

1261. [4927] Thovaray, Madras. DR. HUNTER.

1262. [4929] Mullay thovaray (*C. indicus*). DR. HUNTER.

1263. [4034] Pigeon pea (*C. indicus*), MR. R. BROWN.

1264. [7165] Arhar kala, dark variety (*C. indicus*), Lucknow.

1265. [7166] Arhar safaid, white variety (*do.*), Do.

1266. [7182] Parbuttee (*Cajanus indicus*), Beerbhoom.

1267. [7179] Parbuttee, Hooghly.

1268. [2811] Thovaray, Madras. DR. SHORTT.

1269. [97] Pigeon pea, Hooghly.

1270. [117] Pigeon pea.

COMMON PEA (*Pisum sativum*).

1271. [94] Pea (*P. sativum*), Benares. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	12·70
Nitrogenous matter	25·20
Starchy matter	58·38
Fatty or oily matter	1·10
Mineral constituents (ash)	2·53
TOTAL	100·00

1272. [98] Pea, Benares. Do.

COMPOSITION.

	Per cent.
Moisture	12·60
Nitrogenous matter	21·80
Starchy matter	62·19
Fatty or oily matter	1·12
Mineral constituents (ash)	2·29
TOTAL	100·00

1273. [95] Pea.

1274. [4933] Buttanee (*P. sativum*), Madras. DR. HUNTER.

1275. [4040] Buttanee, Madras. MR. R. BROWN.

1276. [4764] Buttanee, Burmah. Messrs. HALLIDAY, FOX & Co.

1277. [4817] Paisailong (*P. sativum*), Do. Do.

1278. [2819] Puttanee (*P. sativum*), Madras. DR. SHORTT.

LENTILS (*Ervum lens*).

Cultivated in many parts, but not generally held in high repute.

1279. [101] Lentils (*E. lens*), Calcutta Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	12·70
Nitrogenous matter	24·57
Starchy matter	59·43
Fatty or oily matter	1·01
Mineral constituents (ash)	2·29
TOTAL	100·00

NATIONAL ARCHIVES OF INDIA

1280. [102] Lentils (husked), Bombay Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	12·50
Nitrogenous matter	24·65
Starchy matter	59·34
Fatty or oily matter	1·14
Mineral constituents (ash)	2·37
TOTAL	100·00

1281. [103] Lentils (whole), Calcutta Bazaar.

COMPOSITION.

	Per cent.
Moisture	11·40
Nitrogenous matter	26·18
Starchy matter	59·43
Fatty or oily matter	1·00
Mineral constituents (ash)	1·99
TOTAL	100·00

1282. [104] Lentils, Bombay Bazaar. Do.

COMPOSITION.

	Per cent.
Moisture	10·72
Nitrogenous matter	25·20
Starchy matter	59·96
Fatty or oily matter	1 92
Mineral constituents (ash)	2·20
TOTAL	100·00

1283. [4753] Lentils, Burmah. Messrs. HALLIDAY, FOX & Co.

1284. [4031] Lentils (split), Madras.

1285. [4939] Lentils, Madras. DOCTOR HUNTER.

VETCH (*Lathyrus sativis*).

This pulse is cultivated in many parts of the country; it is not, however, considered a particularly wholesome article of food, for either man or beast. It is too rich in nitrogenous matter, and therefore requires to be largely *diluted.*

1286. [105] Vetch (*L. sativus*), Calcutta Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	10·10
Nitrogenous matter	31·50
Starchy matter	54·26
Fatty or oily matter	0·95
Mineral constituents (ash)	3·19
TOTAL	100·00

1287. [6597] Khesaree (*L. sativus*), Cuttack.

BEAN TRIBE.

Beans are largely cultivated and employed similarly to the foregoing. Of the *Dolichos* species, the two first enumerated are those chiefly used as articles of human food. Of the first mentioned, the *Dolichos Lablab*, there are a number of varieties, all of them favourites.

1288. [133] Whal (*Lablab vulgaris*), Bombay Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	10·81
Nitrogenous matter	24·55
Starchy matter	60·81
Fatty or oily matter	0·81
Mineral constituents (ash)	3·02
TOTAL	100·00

1289. [136] Ghot wall (*L. vulgaris* var.), Bombay Bazaar. Do.

COMPOSITION.

	Per cent.
Moisture	12·02
Nitrogenous matter	22·45
Starchy matter	60·52
Fatty or oily matter	2·15
Mineral constituents (ash)	2·86
TOTAL	100·00

1290. [4926] Velley Mochay (*L. vulgaris*), Cottay, Madras. DR. HUNTER.

1291. [4928] Segapoo (*L. vulgaris*), Madras. DR. HUNTER.

1291A [2804] Mochay cottay (*L. vulgaris*), Madras. DR. SHORTT.

1292 [4800] Segapoo, Burmah. Messrs. HALLIDAY, FOX & Co.

CHOWLEE (*Dolichos sinensis*).

Extensively cultivated. There are three varieties, white, brown, and black.

1293. [132] Chowlee (*D. sinensis*), Bombay Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	12·44
Nitrogenous matter	24·00
Starchy matter	59·02
Fatty or oily matter	1·41
Mineral constituents (ash)	3·13
TOTAL	100·00

1294. [6079] Chowlee, Ahmedabad.

1295. [6158] Chowlee, Poona.

1296. [135] Katjang pootayam (*D. sinensis*), Malacca.

NATIONAL ARCHIVES OF INDIA

COOLTEE, 'Madras Horse Gram' (*Dolichos uniflorus*).

Chiefly cultivated in the Madras territory. Steeped and used for horses; occasionally eaten by man.

1297. [122] Cooltee (*D. uniflorus*), Bombay Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	11·30
Nitrogenous matter	23·47
Starchy matter	61·02
Fatty or oily matter	0·87
Mineral constituents (ash)	3·34
TOTAL	100·00

1298. [129] Cooltee, Bellary, Madras. Do.

COMPOSITION.

	Per cent.
Moisture	11·50
Nitrogenous matter	23·03
Starchy matter	61·85
Fatty or oily matter	0·76
Mineral constituents (ash)	2·86
TOTAL	100·00

1299. [138] Cooltee (*D. uniflorus*).

1300. [4938] Caroopoo colloo (*D. uniflorus*), Madras. DR. HUNTER.

1301. [4035] 'Horse gram' (*D. uniflorus*). Madras.

1302. [128] 'Horse gram.' Do.

1303. [4966] Colloo (*D. uniflorus*), Madras. DR. HUNTER.

1303A. [2796] Colloo, Do. Do. DR. SHORTT.

GUWAR (*Dolichos fabæformis*).

A hard refractory bean, cultivated in the Deccan, steeped, and then almost entirely used for animals.

1304. [139] Guwar (*D. fabæformis*), Poona. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	11·75
Nitrogenous matter	29·80
Starchy matter	53·89
Fatty or oily matter	1·40
Mineral constituents (ash)	3·16
TOTAL	100·00

1305. [4044] Muthee puttay (*Cyamopsis psoralioides*), Madras.

1306. [6078] Guour, Ahmedabad.

BHOOT, *Soja hispida* (*Dolichos Soja*).

Cultivated in many parts to the north of India. This is the same as the well-known Chinese bean, which constitutes such a large article of trade between the northern and southern ports of China. Of all vegetable substances, it is richer in nitrogenous or 'flesh-forming' matter than any yet discovered.

1307. [99] Sahuca bean, white (*Soja hispada*). INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	8·12
Nitrogenous matter	40·63
Starchy matter	29·54
Fatty or oily matter	17·71
Mineral constituents (ash)	4·00
TOTAL	100·00

1308. [100] Sahuca bean, white. Do.

COMPOSITION.

	Per cent.
Moisture	7·96
Nitrogenous matter	37·74
Starchy matter	31·08
Fatty or oily matter	18·90
Mineral constituents (ash)	4·32
TOTAL	100·00

1309. [130] Sahuca bean (black), Sumatra. Do.

COMPOSITION.

	Per cent.
Moisture	10·40
Nitrogenous matter	41·54
Starchy matter	30·82
Fatty or oily matter	12·31
Mineral constituents (ash)	4·93
TOTAL	100·00

Of the **PHASEOLI,** the *P. radiatus* is one of the principal favourites, although it is doubtful if any of these are in such general repute as some of the preceding.

1310. [118] *Phaseolus radiatus*, Bombay Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	11·00
Nitrogenous matter	22·48
Starchy matter	62·15
Fatty or oily matter	1·46
Mineral constituents (ash)	2·91
TOTAL	100·00

1311. [4937] Patchay pyaroo (*P. radiatus*), Madras. DR. HUNTER.

1312. [4936] Patchay pyaroo. Do.

NATIONAL ARCHIVES OF INDIA

1313. [4964] Thoolokah pyaroo (*Phaseolus radiatus*), Chingleput. DR. SHORTT.

1314. [4816] Paidee (*P. radiatus*), Burmah. Messrs. HALLIDAY, FOX & Co.

1315. [116] Paidee. Do.

1316. [120] Paidee. Do.

1317. [123] Paidee. Do.

1318. [7184] Oord (*P. radiatus*), Lucknow.

1319. [4043] Oord (husked), Madras.

1320. [125] Green gram (*Phaseolus mungo*), Bombay Bazaar. INDIA MUSEUM.

COMPOSITION.

	Per cent.
Moisture	9·20
Nitrogenous matter	24·70
Starchy matter	60·36
Fatty or oily matter	1·48
Mineral constituents (ash)	3·26
TOTAL	100·00

1321. [126] Green gram (husked as 'dholl'), Bellary, Madras. Do.

COMPOSITION.

	Per cent.
Moisture	12·90
Nitrogenous matter	23·54
Starchy matter	59·38
Fatty or oily matter	1·11
Mineral constituents (ash)	3·07
TOTAL	100·00

1322. [4037] Black gram (*P. mungo*), Madras.

1323. [4935] Oolendoo (*P. mungo*), Madras. DR. HUNTER.

1324. [4033] Oolendoo, Madras.

1325. [4802] Painaut (*P. mungo*), Burmah. Messrs. HALLIDAY, FOX & Co.

1326. [4806] Paikinant (*P. mungo*), Burmah. Do.

1327. [4033] Moong, husked (*P. mungo*), Madras.

1328. [124] *Phaseolus aconitifolius*, Calcutta Bazaar.

COMPOSITION.

	Per cent.
Moisture	11·22
Nitrogenous matter	23·80
Starchy matter	60·78
Fatty or oily matter	0·64
Mineral constitutents (ash)	3·56
TOTAL	100·00

It is extensively cultivated in Oude. When split, it forms one of the '*Dâls*,' and ground into flour is used for bread by natives. It is also sometimes used mixed up with wheaten flour. Bullocks, sheep, goats, and many of the native cavalry horses are fed on it. Two varieties are cultivated, white and black. 22 seers per rupee.

1329. [4930] Cawramanee (*P. vulgaris*), Madras. DR. HUNTER.

1330. [4931] Cawramanée. Do.

1331. [6239] Kiwánch-ka-beej (*Mucuna prurita*), Bombay.

1332. [105*] Dhoolaconda (*M. prurita*), Do.

1333. [4941] Poona kalie (*M. prurita*), Madras. DR. HUNTER.

1334. [4039] Agathee (*Agate grandiflora*), Madras.

The undermentioned is a peculiar grain-like substance from Malacca, the botanical source of which has still to be determined. The appearance of the seed does not afford any very distinct clue to this; its composition leads, however, to the conclusion that it is of leguminous origin.

1335. [68*] Ejin or Ee-gin, Malacca.

COMPOSITION.

	Per cent.
Moisture	12·60
Nitrogenous matter	23·06
Starchy matter	59·40
Fatty or oily matter	0·89
Mineral constituents (ash)	4·05
TOTAL	100·00

NATIONAL ARCHIVES OF INDIA

SECTION B.—GROCERY OR PREPARATIONS OF FOOD AS SOLD FOR CONSUMPTION.

FRUITS.

The specimens of dried fruits are good, and their condition, generally speaking, excellent. They comprise many which are but little known in England.

1336. [4190] Mangosteen (*Garcinia Mangostana*), Rambutan; Rambai; Limon Kandangsa; Langsat; Kumbule; Rumania. Penang.

1337. [4191] Custard apples; Mangosteen; Guava; Buahbell, Pulasan, Amrah, Limonpurut, Blimbing-buloh, Blimbing-saga, Assam-glugor, Katapang and Blinjow. Penang.

1338. [4192] Durian, Rambutan, Rambai, Sillooh, Assam Kulubi, Pulasan, and Blimbing (*Averrhoa Bilimbi*). Penang.

1339. [4193] Mangosteen, Jamboo (*Eugenia Jambolana*), Papaya (*Carica Papaya*), Blinjow, Buah-dulee-mah, Buah-bungah Siam, Buahblingai, Assam Glugor. Penang.

1340. [4194] Durian, Mangosteen; Amrah, Nutmegs and Rambai. Penang.

1341. [4359] Durian, Mangosteen, Lemon kaya, Namnam, Rambutan Langoat, Konajang. Singapore.

A number of specimens of imitation fruits have also been sent for exhibition. These may now be fitly introduced. They are all from Lucknow, with one exception.

1342. [5131] Imitation squash.

1343. [5132] Bael fruit.

1344. [5134] Mango.

1345. [5136] Guava.

1346. [5138] Custard apple.

1347. [5140] Orange.

1348. [5142] Kumralk.

1349. [5144] Plantain.

1350. [5147] Cucumbers.

1351. [5150] China peach.

1352. [5151] Lime.

1353. [10052] Certain imitation fruits from Bareilly.

PICKLES, PRESERVES, DRIED FRUITS, ETC.

1354. [5730] Preserve of *Asparagus racemosus*, Lucknow.

1355. [5672] Limes, Do.

1356. [5673] Imitation fish, cut out of *Benincasa cerifera*, Do.

1357. [5670] White mango, Do.

1358. [5669] Preserve of *Momordica charantia*, Do.

1359. [5667] Carrot, Do.

1360. [5663] Petha (*Benincasa cerifera*), Do.

1361 [5665] Chillies, Do.

1362. [5668] Green mango, Do.

1363. [5671] Oranges, Do.

1364. [5677] Nauratan pickle, of nine ingredients, among which are mangoes, figs, &c., Do.

1365. [5674] Pickles of *Averrhoa Carambola*, Do.

1366. [5676] Tamarind chutney (*Tamarindus indica*), Do.

1367. [5675] Mango chutney (*Mangifera indica*), Do.

1368. [10169] Bael (*Ægle marmelos*), Calcutta.

1369. [4777] Gee Thee, Burmah. Messrs. HALLIDAY, FOX & Co.

1370. [4066] Niangis burong, Penang.

1371. [5664] Preserve of *Artocarpus lacoosha*, Lucknow.

1372. [10193] Pickles of *Artocarpus lacoosha*, Do.

1373. [10171] Mowha flowers (*Bassia latifolia*), Moonghyr.

1374. [7177] Do., Lucknow.

NATIONAL ARCHIVES OF INDIA

1375. [6456] Mowha flowers, Allahabad.

1376. [6110] Oomla (*Phyllanthus emblica*), Ahmedabad.

1377. [5182] Dried plantains (*Musa paradisiaca*), Ramree.

1378. [6107] Figs (*Ficus Carica*), Bombay.

1379. [6106] Kokum (*Garcinia purpurea*), Poona.

1380. [6103] Raisins (*Vitis vinifera*), Bombay.

1381. [6113] Sultanas, Do.

1382. [7100] Cabul grapes, Calcutta.

1383. [6138] Raisins, Bombay.

1384. [1861] Raisins, Punjab.

1385. [1910] Tamarinds, (*Tamarindus indica*), Bengal.

1386. [4780] Tamarinds, Burmah. Messrs. HALLIDAY, FOX & Co.

1387. [6102] Tamarinds, Ahmedabad.

1388. [6101] Tamarinds, Poona.

1389. [6108] Dates (*Phœnix dactylifera*), Bombay.

1390. [6099] Jujubes (*Zizyphus jujuba*), Do.

1391. [6134] Jujubes, do.

1392. [6248] Sebestens (*Cordia latifolia*), Do.

1393. [6100] Amboolie (*Mangofera indica*), Ahmedabad.

1394. [6034] Shah bulloot (edible acorns), Bombay.

1395. [6071] Pounded Shah bulloot, Do.

1396. [6074] Chilgoza (*Pinus Gerardiana*), Do.

1397. [6109] Badam (*Amygdalus communis*), Do.

1398. [6133] Peroo (*Psidium pomiferum*), Do.

1399. [4795] Kya Tsai (*Nelumbium speciosum*), Burmah.

SPICES, ETC.

1400. [6690] Black pepper (*Piper nigrum*), Singapore. JOSE D'ALMEIDA, Esq.

1401. [6689] White pepper, Singapore. JOSE D'ALMEIDA, Esq.

1402. [6668] Black pepper (*Piper nigrum*), Rhio. Do.

1403. [6685] White pepper. Do. Do.

1404. [1*] Black pepper (*P. nigrum*), Travancore.

1405. [6105] Black pepper, Bombay.

1406. [4*] Wild pepper (*P. trioicum*), Travancore.

1407. [4145] Soosoo pepper (*P. nigrum*), Penang.

1408. [4146] Trang pepper (*do.*), Do.

1409. [8*] White pepper (*do.*), Bengal.

1410. [10730] White pepper, Mangalore. V. P. COELHO, Esq.

1411. [4808] Black pepper (*P. nigrum*), Burmah. Messrs. HALLIDAY, FOX & Co.

1412. [6104] Pepile (*Chavica Roxburghii*), Bombay.

1413. [6691] Long pepper (*C. officinalis*), Java. JOSE D'ALMEIDA, Esq.

1414. [6210] *C. Roxburghii*, Calcutta.

1415. [10170] *C. Roxburghii*, Assam. LIEUT. PHAIRE.

1416. [6486] Sha morich (*P. nigrum*), Calcutta. KANNY LOLL DEY.

1417. [4779] Chillies (*Capsicum* sp.), Burmah. Messrs. HALLIDAY, FOX & Co.

1418. [6114] Muchai (*Capsicum frutescens*), Poona.

1419. [6116] Muchai, Ahmedabad.

1420. [6213] Capsicums (*C. fastigiata*), Calcutta.

1421. [6212] Capsicums (*C. frutescens*), Do.

1422. [6124] Assalia (*Lepidum sativum*), Ahmedabad.

1423. [10737] Kavate (*Xanthoxylum* sp.), Mangalore. V. P. COELHO, Esq. Used by the natives in their curries.

1424. [10678] Cardamoms (*Elettaria cardamomum*), Pickled. Do.

1425. [4788] Cardamom seeds (*Amomum* sp.), Burmah. Messrs. HALLIDAY, FOX & Co.

NATIONAL ARCHIVES OF INDIA

1426. [70*] Cardamoms (*Elettaria cardamomum*), Calcutta.

1427. [65*] Do.

1428. [66*] Do. Travancore.

1429. [6218] Ginger (*Zinziber officinalis*), Midnapore.

1430. [1908] Do. Calcutta.

1431. [6216] Do. KANNY LOLL DEY.

1432. [6092] Green ginger (*do.*), Poona.

1433. [6093] Soont ginger (*do.*), Ahmedabad.

1434. [6094] Udruck ginger (*do.*), Bombay.

1435. [6111] Turmeric (*Curcuma longa*), Ahmedabad.

1436. [4144] Cloves (*Caryophyllum aromaticum*), Penang.

CLOVE PLANT.

1437. [6089] Cloves (mature fruits), Bombay.

1438. [4195] Cloves (preserved), Penang.

1439. [6088] Cloves, Bombay.

1440. [44*] Cassia buds (*Cinnamomum* sp.), Canara.

1441. [7181] Cinnamon (*Laurus nitida*), Calcutta. KANNY LOLL DEY.

1442. [6090] Do. Bombay.

1443. [6091] Cinnamon (*C. cassia*), Bombay.

1444. [36*] Wild cinnamon, Coorg.

1445. [33*] Cinnamon, Travancore.

1446. [6344] Do. Singapore. JOSE D'ALMEIDA, Esq.

1447. [34*] Sassafras bark, Martaban.

1448. [98*] Malabathrum leaves (*Cinnamomum cassia*).

1449. [4139] Nutmegs (*Myristica moschata*), Penang.

1450. [4194] Do. (preserved). Do.

1451. [4195] Do. Do.

1452. [4140] Do. Do.

1453. [4138] Do. (in shell), Do.

1454. [6073] Jaiputree (*Myristica* sp.), Bombay.

1455. [6097] Jawntree mace (*Myristica tomentosa*), Bombay.

1456. [4142] Mace (*M. moschata*), Penang.

1457. [6096] Jaiputree mace (*Myristica* sp.), Bombay.

1458. [6119] Sowa (*Anethum Sowa*), Ahmedabad.

1459. [6118] Warcalee (*Fœniculum panmorium*), Poona.

1460. [6117] Coriander (*Coriandrum sativum*), Poona.

1461. [6122] Sowa (*Anethum Sowa*), Poona.

1462. [6123] Jeera (*Cuminum cyminum*), Ahmedabad.

1463. [6120] Carraway (*Carum nigrum*), Bombay.

1464. [6121] Ajowan (*Ptychotis ajowan*), Poona.

1465. [6115] Poppy seed (*Papaver somniferum*), Ahmedabad. Used as a condiment.

NATIONAL ARCHIVES OF INDIA

SUBSTANCES USED IN THE PREPARATION OF DRINKS :—

TEA.

The collection is one of the greatest interest, both as to magnitude and the quality of the article displayed. No fewer than 153 different samples of tea are exhibited, and many of these are of excellent quality. All of them are unadulterated with colour, and show at least what we ought to receive in 'green' and 'black' teas.

An exhibition of teas from localities other than the well-known ones in China possesses more than ordinary interest. There can be no doubt that tea will be extensively cultivated in India — land spread over a district exceeding 1,000 miles in length being more or less adapted to its growth. The production of tea in Assam has taken very firm root, and is spreading with almost unexampled rapidity. But the cultivation of tea is not confined to Assam; the Government of India having succeeded, through the able agency of Dr. Jameson, in introducing its cultivation into Dhera Dhoon, Kumaon, Gurhwal, and Kangra. As the result of this, private enterprise — as represented by a number of individuals and several companies — is now engaged in extending its cultivation in the districts in question — the Government still, however, continuing to foster its growth, not with the view to immediate pecuniary profit, but simply to encourage so important an article of commerce. Of what is being done, a very good notion is conveyed by the samples displayed.

Tea from Assam.

1466. [7243] Congou, No. 1, Assam. ASSAM TEA COMPANY.

1467. [7244] Congou, No. 2, Assam. Do.

1468. [7245] Flowery Pekoe, Do. Do.

1469. [7246] Orange Pekoe, Do. Do.

1470. [7247] Pekoe Souchong, Do. Do.

The Assam Company has been established since 1839, and now supplies the markets of London and Calcutta with no fewer than 1,000,000 lbs. of tea annually. The plant, which is reared in nurseries until it is matured, was first obtained from the shrubs indigenous to the country. It begins to yield in its third year, and attains its maximum production in the seventh. One and the same plant affords the following varieties: — Pekoe, Flowery Pekoe, Orange Pekoe, Souchong, Congou, and Bohea. The kind of tea is determined simply by the number of the sieve through which the dried leaves will pass.

1471. [4703] Fine flowery Pekoe, Do. Pekoe, Do. Souchong, Green tea, Chundypore Factory (season 1861), Assam. Messrs. JOHN BORRADAILE & Co., *Calcutta.*

1472. [4704] Fine Congou, Do. Do.

1473. [4705] Fine flowery Pekoe, Do. Pekoe, Do. Souchong, Do. Congou, Soorispore Ballicandy Factory (season 1861), Assam. Do.

1474. [2023] Fine Souchong, Coocheela Factory (season 1861), Assam. Do.

1475. [2024] Fine Pekoe, Do. Do.

1476. [4404] Fine flowery Pekoe, Do. Do.

1477. [2085] Pekoe tea, Do. T. MORGAN, Esq., *Debrooghur, Assam.* Maijan Plantation.

1478. [2086] Souchong, Do. Do.

1479. [2087] Congou, Do. Do.

1480. [2095] Flowery Pekoe, Do. W. STRAFORD, Esq., *Jorehaut, Assam.* Noakharee Plantation.

1481. [2096] First class Pekoe, Do. Do.

1482. [2097] Unsorted Black, Do. Do.

1483. [2098] Greenish tea (finest), Do. Do.

1484. [2034] Pekoe, Do. G. WILLIAMS, Esq., *Seebsagur,* Assam. Benganakooah Tea Plantation.

1485. [2035] Do. Do. Singlo, Assam.

1486. [2036] Do. Do. Nowgong. Diffloo, Assam.

1487. [2037] Do. Do. Seebsagur. Gilliedary, Assam.

1488. [3970] Orange Pekoe (Chah or Phalap), Dibrooghur. H. E. S. HANNAY, Esq.

1489. [3967] *Pekoe, Do., Mankottah,* Upper Assam. Messrs. HIGGS, SEVENOAKS & MELANY.

NATIONAL ARCHIVES OF INDIA

1490. [3968] Hyson, Mankottah, Upper Assam. Messrs. HIGGS, SEVENOAKS & MELANY.

1491. [3969] Scented Pekoe, Do. Do. Do.

1492. [3971] Pekoe, Do., Nagaghooli, Upper Assam. Messrs. BARRY & WAGENTRIEBER.

These teas have been manufactured from China plants, in July 1861.

1493. [3972] Souchong (Chah or Phalap), Nagaghooli, Upper Assam. Messrs. BARRY & WAGENTRIEBER.

1494. [3973] Congou, Do. Do. Do.

1495. [3974] Pekoe, Do. Do. Do.

Manufactured from indigenous plants, in July 1861.

1496. [3975] Souchong, Do. Do. Do.

1497. [3976] Congou, Do. Do. Do.

1498. [3977] Green, Mankottah Sesa Barie, Upper Assam. DHATOORAM JEMADAR.

The manufacture of this tea differs from China tea. The Assam green teas are unfaced, and not coloured in any degree.

1499. [2092] Pekoe (Chah or Phalap), Maijam, Upper Assam. C. H. MORGAN, Esq.

1500. [2093] Souchong, Do. Do. Do.

1501. [2094] Congou, Do. Do. Do.

1502. [2088] Flowery Pekoe, Khowang, Assam. CAPTAIN LLOYD, Commissioner of *Assam.*

Manufactured by H. L. JENKINS, Esq.

1503. [2089] Orange Pekoe, Gowhatty. H. G. BAINBRIDGE, Esq., *Gowhatty.*

Manufactured from Assam leaf.

1504. [2090] Flowery Pekoe, Do. H. G. BAINBRIDGE, Esq., *Gowhatty.*

Manufactured from China leaf.

1505. [2091] Flowery Pekoe, Do.

Tea from Cachar.

A number of new plantations have been started in this district. Already upwards of fifty are said to exist, and some thousands of acres are under cultivation.

1506. [3963] Flowery Pekoe, Cachar. The produce of the Goongoor Pahar Plantation, of the season of 1861, belonging to the Cachar Company. Superintendent, R. STEWART, Esq.

1507. [3964] Orange Pekoe, Do. Do.

1508. [3965] First-class Souchong manufactured from leaf taken from China plant, Do. Do.

1509. [3966] First-class Souchong manufactured from the plant indigenous to Cachar, Do. Do.

1510. [4400] Flowery Pekoe. Messrs. TYDD, FORBES & Co., *Cachar.* Victoria Tea Garden Plantation.

1511. [4401] Pekoe, Do. Do.

1512. [4402] First quality Souchong, Do. Do.

1513. [4403] Second do. Do. Do.

1514. [3717] Souchong. MR. PATERSON, *Tullee Cheera*, at *Sylhet.*

1515. [3718] Congou, Do.

1516. [3730] Flowery Pekoe, Do.

1517. [3731] Pekoe, Do.

1518. [6566] Tea, Chittagong.

Tea thrives vigorously in this place. It is good, though gathered from trees little cultivated, and not properly dried and prepared.*

1519. [2149] Flowery Pekoe, Hazareebaugh. From Seetagurah Plantation.

1520. [2148] Orange Pekoe, Do. Do.

1521–24. [2144–7] Pekoe, Do. Do.

1525. [3734] Indigenous tea plant, Do.

Found in the jungles, being of wild indigenous growth.†

Tea from Darjeeling.

The following remarks on the cultivation of tea and coffee in the Darjeeling territory are by DR. CAMPBELL, to whom we are chiefly indebted for the excellent display of Indian teas on the present occasion.

The first trial of the tea plant at Darjeeling was made in 1841, with a few seeds grown in Kumaon from China stock. It was quite successful as to its growth, and the quality was approved of by the Assam tea planter who visited Darjeeling in 1846, and made the first tea here. The original plants are now to be seen. All are of gigantic size: one is a bush 50 feet in circumference and 20 feet high.

* Local Committee, *Chittagong.*
† Local Committee, *Chota Nagpore.*

NATIONAL ARCHIVES OF INDIA

Nevertheless 7,000 feet, the elevation of Darjeeling, is too great for profitable planting: the frost kills the seedlings, and there is not a sufficiently rapid succession of leaf in the warm season to make the manufacture pay. At 7,500 feet the plant does not thrive at all. Elevations of 4,500 feet and under that to 2,000, are the best for tea, and from 3,000 to 1,200 feet will probably be found the best for coffee. Tea and coffee plantations at higher elevations than these may eventually come into occasional use to secure high-flavoured produce without reference to profit.

Although experiments continued to be made on the growth of the tea plant, and seed from Assam and Kumaon was distributed gratuitously by Government, it was not till 1856 that the first plantation was started at Kursing, and another near Darjeeling, by Captain Samler, who was also the first to try coffee. The success in both cases has been complete and others have followed in the same path. Indeed, all that is now required is careful and liberal encouragement by the Government, to render these hitherto valueless mountains a rich and productive field for European enterprise, a profitable source of pleasant labour to the Hill tribes, and through these channels a source of strength and stability to our power.

The following table exhibits the quantity of land taken up for tea and coffee planting in Darjeeling up to 1861, with the extent of cultivation, the numbers of plants out of nursery, the probable quantity of tea for the season of 1861, and the labour employed.

The manufacture of tea in Darjeeling begins in April and ends in October. During the period twenty pickings

RETURN OF TEA AND COFFEE PLANTATIONS IN THE DARJEELING TERRITORY, 1861.

Name of Planter or Company	Extent of Grant in Acres	Acres in Tea Cultivation	No. of Plants not in Nursery	No. of lbs. of Tea to be made in 1861	Labourers
Kursing and Darjeeling Tea and Coffee Company, Limited	2,000	421 acres in tea 112 in coffee	At Darjeeling 318,000. At Kursing, 184,000. At Kursing, coffee 91,800	20,000 lbs. of tea at Darjeeling and Kursing. At Kursing, 2,000 lbs. of coffee, 1,200 tea seed	300
Tuckvor Tea Company, Limited	1,500	500 tea, 20 coffee	950,000	3,200	360
Hopetown Tea Association, Limited	1,500	500	900,000	4,800	360
Balasan Tea Company, Limited	1,000	130	200,000	None	150
J. Perry, Kenwick		25	30,000		30
J. Cleene, Hopetown		25	20,000		25
W. Taylor, Hopetown	300	8 Coffee. Nursery 300 acres.			25
Mr. Vaughan		Seed in Nursery			10
Darjeeling Tea Company, Limited	4,150	200	240,000	4,800	700
Ging Park and Ambotia	3,000	50	60,000		
Mr. Truetter	26	9	13,000	1,600	24
Minchu	81	8	20,000		10
Singell	1,500	240		None	200
Wardroper and Ames :—					
Kursing	100	80	132,000	2,000	50
Tuckvor		15	36,000		
Torikoolla	360	200	8,000	1,000	30
Mr. Grant	150	12	20,000	400	20
Mr. Barnes	300	13 Tea. 3 Coffee			40
Castleton	300	200	300,000		100
Dooturia	4,000	500	800,000	48 oz.	
Darjeeling Tea Company, Limited	1,598				
Total	21,865	3,251	Tea plants, 4,303,000 Coffee, 91,800	42,600 Tea 20,000 Coffee	2,534

of leaves are reckoned on. The tea of April, May, and October is the finest. The coffee is cured from October to January.

The number of tea plants per acre varies from 1860 to 2,700, according as they are placed at 5 or 4 feet apart. The produce of tea per acre looked for from the *first year of manufacture* to the fourth or fifth, when a plantation is at maturity, cannot be correctly estimated. The produce per plant in the fourth year of age is variously estimated at ½ to 3 ounces. Captain Masson, in a memorandum of his operations at Tuckvor, states 'he got last season from a few indigenous Assam plants grown at an elevation of 5,000 feet above the sea *one pound* of manufactured tea from *each tree*. The trees were seven years old.' This is an immense return, and not to be reckoned on, on a large scale.

Labour is still abundant, and is likely to continue so from the absence of demand in Eastern Nepaul, the great source of supply. The plantations give steady employment to about 3,000 persons, with extra hands occasionally. Wages of Coolies 4*s.* 8*d.* to 5*s.* per mensem.

Employment on tea and coffee is preferred to that on roads and buildings. Wages of manufacturing Coolies amount to 8 rupees per mensem; that of European assistants to from 100 to 150 rupees; of managers from 200 to 400, with house, &c.

The capital involved in tea and coffee plantations in Darjeeling up to 1861, is 1,600,000 rupees or 160,000*l.*

NATIONAL ARCHIVES OF INDIA

The difficulty of communication with Rajmahal is still the greatest drawback to the progress of tea and coffee planting, as it is to the general advancement of Darjeeling. For the full developement of its resources, a continuation of the rail to the foot of the Hills is required.

1526. [3732] Pekoe tea, *Darjeeling.* Forwarded by Messrs. WOOD, OLIFFE & Co., agents of the Kursiong and Darjeeling Tea Company. CAPTAIN SAMLER.

1527. [3733] Do. Kursiong. Do.

1528. [3718] Pekoe. Kursiong Plantation. *Darjeeling.* P. H. SCANLAN, Esq.

1529. [3719] Souchong. Do.

1530. [3720] Congou. Do.

1531. [3721] Souchong, Kursiong Plantation. P. H. SCANLAN, Esq.

1532. [3722] Pekoe. Do.

1533. [3723] Congou. Do.

1534. [3724] Pekoe. Do.

1535–8. [3725–28] Four samples of mixed black tea. Tuckvor Tea Plantation. *Darjeeling.* CAPTAIN MASSON.

1539. [2047] Souchong. *Darjeeling.* MAHOMED TONIKOOLLA.

1540. [2040] Do. *Darjeeling.* HOPE TOWN TEA ASSOCIATION.

1541. [2039] Pouchong. Do.

1542. [2038] Souchong. Do.

1543. [2041] Hyson. Do.

1544. [4415] Pekoe. Do.

1545. [4416] Pouchong. Do.

1546. [4417] Souchong. Do.

1547. [4418] Hyson. Do.

1548. [4711] Fine Souchong. Koalagire Tea Plantation. *Darjeeling.* GOVERNMENT.

1549. [4412] Souchong. Do.

1550. [4411] Pouchong. Do.

1551. [4410] Bohea. Do.

1552. [4708] Young Hyson. Do.

1553. [4414] Hyson. Do.

1554. [4709] Imperial gunpowder. Do.

1555. [4707] Gunpowder. Do.

1556. [4706] Hyson skin. Do.

1557. [4413] Pekoe. Koalagire Tea Plantation. *Darjeeling.* GOVERNMENT.

1558. [2045] Hyson. Do.

1559. [2046] Souchong. Do.

1560. [3729] Young Hyson. Do.

1561. [3994] Brick tea, Sikkim. DR. CAMPBELL.

Tea from Deyrah Dhoon.

The following samples have been forwarded from this important district:—

1562. [4407] Pouchong. Hurbunswala, Arcadia, and Hope Town Plantation, *Deyrah Dhoon.* NORTH-WEST TEA COMPANY.

1563. [2099] Young Hyson. Do.

1564. [4710] Hyson. Do.

1565. [4405] Pukh Hyson. Do.

1566. [4406] Gunpowder. Do.

1567. [4409] Company's Mixture. Do.

1568. [2100] Fine Souchong. Do.

1569. [4408] Souchong. Do.

Tea from Kumaon and Gurwhal.

Both in Kumaon and Gurwhal, and the Deyrah Dhoon, Government plantations,* as well as those of individuals and companies, are to be found. In the year 1861 alone, the Government distributed to private planters throughout Kumaon, Gurwhal, Deyrah Dhoon, and the Punjab, upwards of 130 tons of seed, and 2,400,000 seedlings.

1570. [3986] Souchong. Megree Tea Plantation. *Kumaon.* C. R. TROUP, Esq.

1571. [3987] Pouchong. Do.

1572. [3988] Bohea. Do.

1573. [3989] Souchong. Konsamire Tea Plantation. *Kumaon.* KONSAMIRE TEA COMPANY.

1574. [3990] No. 1 Young Hyson. Do.

1575. [3991] No. 2 Do. Do.

1576. [3992] Hyson. Do.

1577. [3993] Imperial Gunpowder. Do.

* The Government tea factories and plantations in Kumaon and Gurwhal, as well as those in Kan[illegible] about to be notified for sale by public auc[illegible]

NATIONAL ARCHIVES OF INDIA

1578. [4385] No. 1 Imperial Gunpowder. Kumaon Hawalbagh Tea Plantation. GOVERNMENT.

1579. [4386] No. 2 Do. Do.

1580. [4387] Gunpowder. Do.

1581. [4388] No. 1 Young Hyson. Do.

1582. [4389] No. 2 Do. Do.

1583. [4390] No. 1 Hyson. Do.

1584. [4391] No. 2 Do. Do.

1585. [4392] Hyson Skin. Do.

1586. [4393] Souchong. Do.

1587. [4394] Bohea. Do.

1588. [4395] Souchong. Kumaon Agartola Tea Plantation. GOVERNMENT.

1589. [4396] Pouchong. Do.

1590. [4397] Bohea. Do.

1591. [4398] Souchong. Kumaon Bhurtpore Tea Plantation. GOVERNMENT.

1592. [4399] Pouchong. Do.

1593. [7242] Bohea. Kumaon Blimthal Tea Plantation. GOVERNMENT.

1594. [3980] Fine Souchong. *Gurwhal.* GOVERNMENT.

1595. [3981] Souchong. Do.

1596. [3982] Pouchong. Do.

1597. [3983] Bohea. Do.

1598. [3984] Souchong. Warrand Field Tea Plantation, *Gurwhal.* T. WARRAND, Esq.

1599. [3985] Souchong. Willow Bank Tea Plantation, *Gurwhal.* G. RICHARDS, Esq.

Tea from Kangra, Punjab.

Upwards of 1416 maunds, or more than 52 tons, of the seed were obtained from the Government plantations at Kangra for distribution in 1861. The present exhibition includes the following samples:—

1600. [2026] Hyson. Kangra Tea Plantation. *Kangra.* GOVERNMENT.

1601. [2027] Young Hyson. Do.

1602. [2028] Gunpowder. Do.

1603. [2029] Imperial Gunpowder. Do.

1604. [2030] Hyson Skin. Kangra Tea Plantation. GOVERNMENT.

1605. [2031] Souchong. Do.

1606. [2032] Pouchong. Do.

1607. [2033] Bohea. Do.

Note.—The above samples were those first forwarded. The eight which follow are superior in point of quality, but these did not come to hand until the jury had all but concluded its labours.

1608. [7860] Souchong, Kangra. GOVERNMENT.

1609. [7861] Hyson, Do. Do.

1610. [7862] Imperial Gunpowder, Do. Do.

1611. [7863] Young Hyson, Do. Do.

1612. [7864] Souchong, Do. Do.

1613. [7865] Souchong, Do. Do.

1614. [7866] Hyson, Do. Do.

1615. [7867] Souchong, Do. Do.

Sample of Tea from Burmah.

1616. [4758] Brick tea, Burmah. Messrs. HALLIDAY, FOX & Co.

COFFEE.

This important berry is being extensively cultivated in the high-lands of Southern India, and large tracts of country are available for the extension of its growth.

The amount and value of the coffee exported from India will be gathered from the Table subjoined. (*See next page.*)

1617. [5065] Coffee (*Coffea arabica*), Mysore. COLONEL ONSLOW.

Known in the market as 'Cannon's Mysore.'

The subjoined remarks on coffee-planting in Mysore are by COLONEL ONSLOW:—

According to the traditions of the country, the coffee plant was introduced in Mysore by a Mussulman pilgrim, named Baba Booden, who came from Arabia about 200 years ago, and took up his abode as a hermit in the uninhabited hills in the Nuggur Division named after him, and where he established a muth or college, which still exists, endowed by Government. It is said that he brought seven coffee berries from Mocha, which he planted near to his hermitage, about which there are now to be seen some very old coffee trees. However this may be, there is no doubt that the coffee plant has been known in that neighbourhood from time immemorial; but the berry has never come into general use among the people for a beverage. It is only of late years that the coffee trade of these districts has become of any magnitude, or that planting has been carried to any important extent. There is no record of either farther back than the year 1822, when the revenue was under contract. In the year 1837,

NATIONAL ARCHIVES OF INDIA

SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF COFFEE EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Other Parts		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850–51	Bengal	28,787	353	691,476	13,137	123	1	..	..	..	..	..	..	36,848	453	757,234	338	13,944
	Madras	1,728,076	18,105	205,001	2,050	..	..	..	..	..	..	1,254,692	11,377	97,177	1,179	3,284,946	1,466	32,711
	Bombay	2,452,854	43,026	216,627	3,949	..	..	..	..	381	5	537,451	6,778	7,928	96	3,215,241	1,435	53,854
	All India	4,209,717	61,484	1,113,104	19,136	123	1	..	..	381	5	1,792,143	18,155	141,953	1,728	7,257,421	3,239	100,509
1851–52	Bengal	3,043	59	336,814	6,458	..	..	..	..	..	..	..	..	1,974	40	341,831	153	6,557
	Madras	956,537	9,568	398,455	3,985	..	..	..	..	..	..	1,272,269	11,463	146,377	1,464	2,773,638	1,238	26,480
	Bombay	5,364,855	48,802	..	..	..	..	..	..	280	5	227,285	2,435	2,639	27	5,595,059	2,498	51,269
	All India	6,324,435	58,429	735,269	10,443	..	..	..	..	280	5	1,499,554	13,898	150,990	1,531	8,710,528	3,889	84,306
1852–53	Bengal	19,164	372	143,773	2,798	..	..	..	..	..	..	..	..	73,449	1,043	236,386	106	4,213
	Madras	1,097,760	10,298	885,966	8,636	..	..	136,080	1,215	..	..	1,668,413	14,896	197,987	1,911	3,986,206	1,777	36,956
	Bombay	3,127,921	50,359	201,246	2,594	..	..	..	..	603	12	300,823	3,194	12,367	162	3,642,960	1,626	56,321
	All India	4,244,845	61,029	1,230,985	14,028	..	..	136,080	1,215	603	12	1,969,236	18,090	283,803	3,116	7,865,552	3,509	97,490
1853–54	Bengal	..	141	..	5,347	..	..	448	6	..	..	..	..	..	1,102	..	..	6,596
	Madras	804,033	8,041	497,753	4,978	..	..	..	..	..	..	1,835,533	16,472	827,904	8,283	3,965,223	1,770	37,774
	Bombay	2,214,751	39,548	1,001,905	17,891	..	..	..	..	..	..	278,502	3,044	277,411	4,908	3,772,569	1,683	65,391
	All India	..	47,730	..	28,216	..	..	448	6	..	..	2,114,035	19,516	..	14,293	..	..	109,761
1854–55	Bengal	171,696	3,350	104,384	2,030	6,720	130	..	..	..	..	44,800	870	55,888	697	383,488	171	7,077
	Madras	771,716	7,717	339,875	3,399	..	..	..	..	..	..	2,089,656	18,716	477,922	4,779	3,679,169	1,642	34,611
	Bombay	2,235,815	27,198	726,594	9,082	37,380	467	..	..	168	2	336,066	4,325	2,471	32	3,338,494	1,490	41,106
	All India	3,179,227	38,265	1,170,853	14,511	44,100	597	..	..	168	2	2,470,522	23,911	536,281	5,508	7,401,151	3,303	82,794
1855–56	Bengal	6,608	137	413,252	8,546	..	..	..	..	392	8	..	..	9,727	190	429,979	192	8,881
	Madras	1,494,542	14,956	1,107,716	11,077	..	..	2,464	25	..	..	1,757,148	16,679	368,168	3,541	4,730,038	2,112	46,278
	Bombay	3,259,688	53,317	566,293	8,761	52,628	861	..	..	2,960	43	148,660	1,854	15,857	206	4,046,086	1,806	65,042
	All India	4,760,838	68,410	2,087,261	28,384	52,628	861	2,464	25	3,352	51	1,905,808	18,533	393,752	3,937	9,206,103	4,110	120,201
1856–57	Bengal	..	429	..	3,744	..	2,277	..	..	..	1,443	..	14	..	1,147	..	..	9,054
	Madras	1,810,972	18,132	1,554,319	15,543	241,259	2,413	40	1	..	..	230,410	2,110	1,342,864	12,190	5,179,864	2,312	50,389
	Bombay	3,298,322	51,352	601,742	8,893	734,806	11,169	..	..	..	..	142,577	1,755	14,507	207	4,791,954	2,184	73,376
	All India	..	69,913	..	28,180	..	15,859	40	1	..	1,443	..	3,879	..	13,544	..	..	132,819
1857–58	Bengal	8,250	205	70,188	1,451	40,068	829	84	2	..	..	..	..	11,887	246	130,477	58	2,733
	Madras	1,068,723	10,678	136,614	1,366	61,119	611	..	..	..	..	1,024,741	9,579	1,958,652	18,995	4,249,849	1,897	41,229
	Bombay	14,303	29,270	629,296	8,039	420,815	5,961	12,117	224	..	..	663,416	12,195	3,534	76	1,743,481	778	55,765
	All India	1,091,276	40,153	836,098	10,856	522,002	7,401	12,201	226	..	..	1,688,157	21,774	1,974,073	19,317	6,123,807	2,733	99,727
1858–59	Bengal	157,164	3,202	415,884	8,511	..	..	..	..	392	9	..	..	336	7	573,776	256	11,729
	Madras	3,402,854	38,742	2,055,386	20,032	1,643	16	..	..	..	..	527,453	4,756	1,369,497	12,401	7,356,833	3,284	70,947
	Bombay	1,506,938	20,182	1,701,291	24,722	164,808	2,207	..	..	..	..	324,892	4,387	66,657	913	3,764,586	1,681	52,361
	All India	5,066,956	57,126	4,172,561	53,265	166,451	2,223	..	..	392	9	852,345	9,093	1,436,490	13,321	11,695,195	5,221	135,037
1859–60	Bengal	896	19	456,288	8,595	12,544	153	5,264	109	..	..	..	..	14,896	307	489,888	219	9,183
	Madras	3,831,800	38,793	3,831,984	54,176	..	..	..	..	..	..	688,680	9,245	1,637,222	26,446	9,989,686	4,459	128,660
	Bombay	812,408	9,792	2,837,760	38,005	..	..	19,236	258	..	..	181,718	2,433	15,113	203	3,866,235	1,726	50,691
	All India	4,645,104	48,604	7,126,032	100,776	12,544	153	24,500	367	..	..	870,398	11,678	1,667,231	26,956	14,345,809	6,404	188,534
1860–61	Bengal	3,108	74	501,760	11,199	336	8	..	..	..	..	..	..	1,008	24	506,212	226	11,305
	Madras	5,124,899	91,148	7,089,441	125,644	20,412	204	..	..	..	..	574,976	9,920	1,425,504	23,564	14,235,232	6,355	250,480
	Bombay	2,122,358	28,427	1,914,213	41,019	..	..	135,975	2,914	385	8	141,064	1,879	63,770	1,410	4,377,765	1,954	75,651
	All India	7,250,365	119,649	9,505,414	177,862	20,748	212	135,975	2,914	385	8	716,040	11,799	1,490,282	24,998	19,119,209	8,535	337,436

NATIONAL ARCHIVES OF INDIA

when the country had been some years under British rule, the Raja's authority having been suspended in 1832–3, the contract system was discontinued, and a duty of one rupee per maund of 28lbs. was fixed. From that time the production of coffee and duty is duly recorded. In 1843 the duty was reduced to half a rupee per maund on exportation, and in 1849 to a quarter of a rupee. Together with the reduction of duties, regulations for taking up and holding coffee lands were adopted. At the same time prices continued to rise. 'Cannon's Mysore' (the coffee exhibited) has risen from 48*s.* per cwt in 1846–7 to an average of 96*s.* per cwt., and has fetched so high as 115*s.* Native coffee sold in the country has risen from 1 rupee per maund of 28 lbs. to 6 and 8 rupees.

The encouragement thus given to coffee planters has resulted in the great extension of planting, the prosperity of the planters, and an increase of revenue to the state.

Under the contract system the revenue averaged from 1822 to 1832, 4270 rupees annually, and from 1832 to 1837, 7472 rupees annually. The yearly average during the next six years under the duty system, the duty being 1 rupee per maund, was 15,238 rupees on that number of maunds. During the next six years, the duty being half a rupee per maund, the average yearly produce rose to 52,236 maunds, giving a revenue of 26,118 rupees yearly. During the next 12 years, that is, up to 1861 inclusive, to which time the accounts are made up, the yearly average of produce rose to 346,083 maunds, and the revenue to 86,524 rupees, the duty having been reduced to a quarter of a rupee per maund. This short statement serves to show the good effect of liberal measures.

More than 30 years ago a few Europeans were engaged in coffee planting near Chickmoogloor, a few miles from the Bababooden Hills. About 20 years ago the plantations producing the well-known coffee called 'Cannon's Mysore' and others on the Memzera, 'bad mountain,' were commenced by two enterprising gentlemen. The success of these has induced many more Europeans to plant coffee in Mysore. The consequence is, that the coffee trade of Mysore bids fair to emulate that of Ceylon. It has given also an example to other parts of India, and the plant originally taken from the Bababooden Muth is now extending over tens of thousands of acres in Coorg, the Wynaad district, the Neilgherry Hills, and along the Western Ghauts, North and South.

In Mysore the number of European coffee planters has within the last 10 years increased to 20 or 30. The number of native planters is estimated between 3000 and 4000. The quantity of land planted or taken up cannot be ascertained with any degree of accuracy. The revenue depending upon the quality of the coffee produced, not upon a tax on land, there is no regular correct system of land measurement. This way of taxing is bad; it leads to bad cultivation and smuggling. It is to be hoped that a land tax will be adopted instead, which would have a good moral and fiscal effect. It would put an end to smuggling, and would be a great inducement to the natives to improve their cultivation, which is now very slovenly. If the tax were on the land, they would make more effort to increase the produce of it. The average produce per acre in Mysore is probably not half that of Ceylon.

The coffee districts are confined to the region of the Western Ghauts and the Bababooden Hills. Some attempts have been made to cultivate coffee in the open country, but without success; it seems to require forest land and considerable elevation and moisture. 'Cannon's Mysore' is grown on a range of hills from 3,500 to 4,000 feet above the sea, having the benefit of the south-west monsoon, which very seldom fails at all, never entirely, and of the tail-end of the north-east monsoon. It is probably to these advantages that the peculiar qualities of 'Cannon's Mysore' are attributed, viz. closeness of texture and richness of flavour. This elevation gives a pleasant climate well suited to the Europeans. During the south-west monsoon, the planter may be in his gardens all day long without oppression in the hottest weather; the thermometer in house on these plantations rises no higher than 81° or 82° Fahrenheit. The whole of the coffee district, with here and there an exception of feverish spots, possesses a climate in which the European can live and work with comfort, and, with moderate care and prudence, with health.

Planting has of late years been carried to such an extent by Europeans and natives in Mysore, that but little available land remains. These mountain and forest wastes have been turned into rich productive gardens. From being the most wild and desolate parts of Mysore, these districts have become very prosperous, and the people have been raised from poverty to comfort, and in many instances to wealth. The natives are benefiting largely by the capital and example of European planters, and are learning the science of planting.

Mysore generally, especially the coffee districts, affords a most promising field for European capital and enterprise.

1618. [10583] Coffee, Salem. Messrs. FISHER & Co.

1619. [10749] Coffee in husk, Mangalore. V. P. COELHO, Esq.

1620. [6423] Coffee, Chota Nagpore. M. LIEBERT.

1621. [6422] Coffee. Do.

1622. [6567] Coffee. Chittagong.

1623. [6098] Coffee. Bombay.

1624. [6387] Coffee. Malacca. CAPTAIN PLAYFAIR.

1625. [4771] Coffee in husk (*C. arabica*), Burmah. Messrs. HALLIDAY, FOX & Co.

1626. [4174] Coffee. Penang.

1627. [6699] Coffee. Singapore. W. J. VALBORG, Esq.

1628. [4171] Coffee. Penang.

1629. [4148] Coffee. Do.

1630. [6694] Cocoa (*Theobroma Cacao*), Singapore. CAPTAIN W. SCOTT.

This sample was grown experimentally in a garden at Singapore.

Among the substances used in the preparation of drinks the following are included: —

1631. [6095] Hura Char (*Andropogon citratum*), Ahmedabad. Used as a beverage.

1632. [5188] Dietetic Bael (*Ægle marmelos*), Calcutta. Messrs. BATHGATE & Co.

This dietetic preparation is obtained from the fruit of the Bael (*Ægle marmelos*), and is strongly recommended by the manufacturers for invalids and dyspeptic persons, and an agent has been appointed in England for its sale.

NATIONAL ARCHIVES OF INDIA

STARCHES &c.

Arrowroot, Tapioca, and Sago.

1633. [7148] Arrowroot (*Maranta arundinacea*), Cuttack.

ARROWROOT PLANT (*Maranta arundinacea**).

1634. [7149] Wild arrowroot, Cuttack.

It is not easy to decide whether this is identical with our garden arrowroot. A cup of arrowroot made of the one is not distinguishable from a cup made of the other, except, perhaps, by a slightly earthy taste and smell observable in the wild arrowroot, which is easily accounted for by its imperfect manufacture. The cultivation and more perfect manufacture of the garden arrowroot have been comparatively recently introduced into the province, so that it is neither generally grown nor its produce used by the natives. The specimen sent was made from plants of his own growing by a native Christian of 'Khundittur,' who sells his produce among the European residents of Cuttack, his price being a little under 6*d.* per English lb. This arrowroot is of excellent quality, and the process of manufacture as simple as can be. The tubers are taken up in the cold season, washed, put into a large wooden mortar, and mashed. The mash is then taken out, and well washed in cold water, the water drained off, and set to stand in large flat vessels, in which it deposits a large proportion of the arrowroot flour, which is rewashed in cold water, and set to dry in the sun. The wild arrowroot, known in the bazaar as 'Palooa,' grows abundantly in the jungles of the district. It is collected in the cold season by the Sahars, the tubers pounded and mashed, and the sediment dried in the sun. By these people it is eaten and sold for the manufacture of what is called 'Abheer.' In the Sumbulpore, and to a less degree also in the Cuttack District, the wild arrowroot is made into cakes, or boiled with milk, and thus used as an article of food. This Committee had intended to send specimens of sago and tapioca meal, the trees being indigenous, but the time and the season of the year have prevented it.*

1635. [6425] Arrowroot from plant growing wild in the jungles, Chota Nagpore. M. LIEBERT, Esq.

1636. [6425] Arrowroot, Chota Nagpore. M. LIEBERT, Esq.

1636A. [2837–2846] Two kinds of arrowroot, Raepore.

1637. [6565] Starch from wild ginger, Chittagong.

The plant which furnishes this sample grows everywhere in this district: it is very difficult to eradicate it from land, as the smallest root or piece of a root that has an eye will spring up again. The plant dies off in December. A rough experiment was made with this root by the Civil Assistant-Surgeon of this place, DR. W. B. BEATSON, and the yield was estimated at 1 ounce of starch from 1 pound of the root. The experiment, however, was not precise enough to be satisfactory, and he is inclined to think that the yield would be much larger, as the microscope shows the root to be loaded with starch granules. The supply of the root being inexhaustible, any quantity of starch might be extracted from it yearly, and it might be found a valuable article of commerce. There would be no expense for cultivation, and allowing for the cost of digging the root, and manufacturing the starch by bruising and macerating the root in water and drying the deposit, the product would be cheaper than Arracan rice, which is believed to be largely exported to Europe to be used, not as food, but in manufacture for glazing linen, &c.†

1638. [22*] Arrowroot (*Curcuma*, species), Rohilcund.

1639. [18*] Arrowroot. (*C. angustifolia*), Malabar.

1640. [5731] Arrowroot, Burdwan. MR. GOLPIN.

1641. [7147] Arrowroot, Akyab.

Large quantities can be produced if required. This description of arrowroot is prepared from the Pemban Oo root, obtainable in large quantities. Price 4 rupees per maund.‡

1642. [10694] Arrowroot flour, Mangalore. V. P. COELHO, Esq.

1643. [6684] Arrowroot, Singapore. M. T. DAVIDSON, Esq.

1644. [6390] Kledey Poteh, sweet potato flour (*Batatas edulis*), Malacca. CAPTAIN BURN.

1645. [10697] Byne Palm flour (*Caryota urens*), Mangalore. V. P. COELHO, Esq.

---

* From MR. R. HARDWICKE, 192 Piccadilly.

* Local Committee, *Cuttack.*
† Local Committee, *Chittagong.*
‡ Local Committee, *Akyab.*

NATIONAL ARCHIVES OF INDIA

1646. [10698] Amroota Bally, Bangalore. V. P. COELHO, Esq.

1647. [1881] Singara flour (*Trapa bispinosa*), Calcutta. KANNY LOLL DEY.

1648. [34*] Sweet farina of *Parkia biglobosa*, Madras.

1649. [4073] Tapioca (*Jatropha manihot*). Province Wellesley. L. NAIRNE, Esq.

TAPIOCA PLANT (*Jatropha manihot*).*

1650. [4074] Tapioca. LAWRENCE NAIRNE.

1651. [4182] Tapioca, Alma Estate, Province Wellesley. D. C. THOMPSON, Esq.

1652. [1331] Speed's steam-made arrowroot (*Maranta arundinacea*), Calcutta. A. GEORGE, Esq.

1653. [1332] Tapioca, steam-made (*Jatropha manihot*), Calcutta. A. GEORGE, Esq.

1654. [4180] Tapioca flour, Alma Estate, Province Wellesley. R. WILSON, Esq.

1655. [4181] Refuse of tapioca root after extracting the starch, Alma Estate, Province Wellesley.

1656. [6388] Tapioca, Malacca. T. NEUBRONNER, Esq.

1657. [190] Raggy flour (*Eleusine coracana*), Mangalore. V. P. COELHO, Esq.

* From MR. R. HARDWICKE.

1658. [6389] Sago Rombiya, Malacca. CAPTAIN BURN.

1659. [4070] Sago, Penang.

1660. [6697] Sago flour, Singapore. JOSE D'ALMEIDA, Esq.

SAGO PALM.*

1661. [6687] Sago flour, Lingee. Do.

1662. [6692] Pearl sago, Sarawak. G. ANGUS, Esq.

1663. [4071] Sago, Penang.

1664. [4069] Sago.

1665. [4072] Sago.

SALEPS.

1666. [3835] Bechundie, Jubbulpore.

1667. [2838] Bechundie, Raepore.

This substance, if pulverised, resembles arrowroot, and is made use of by natives on fast days, prepared in various ways. It is obtained from the glutinous matter which issues from the stems of a jungle plant, after being soaked in running water for some days. The Gonds prepare the Behchandee. It can be had in any quantity in the Jubbulpore bazaar, but most of it comes from Mundla and Seonee.

The specimens seem to consist of the dried sections of a farinaceous root containing bassorin, and allied in composition to salep.

1668. [6067] Pungie salep, Bombay.

1669. [1811] Salep misree, Punjab.

* From MR. R. HARDWICKE.
† Local Committee, *Jubbulpore*.

NATIONAL ARCHIVES OF INDIA

1670. [6069] Salep misree (*Eulophia campestris* ?), Bombay.

1671. [7040] Mooslee seah (*Murdannia scapiflora*), Bombay.

1672. [5057] Alstrœmeria root. DR. RIDDELL.

Both of these are probably the dried corms of the plant first named, and *not* of an *Alstrœmeria*.

EDIBLE ALGÆ &c.

1673. [6677] Sea weed (*Plocaria candida*), Eastern Archipelago. G. ANGUS, Esq.

1674. [1*] Sea weed. Do.

1675. [2*] Agar agar (*Eucheuma spinosa*), Malacca.

1676. [3*] Agar agar. Macassar.

1677. [6669] Agar agar. Eastern Archipelago. G. ANGUS, Esq.

1678. [7115] Kek kieo, Ramree.

1679. [7116] Kek kieo, Do.

This is a lichen, doubtless *Alectoria jubata*, but the absence of fructification renders it difficult to decide with certainty.

Gelatinous: eaten by the natives with rice. Cost 2 annas. Not exported. Good samples not procurable during the rains.*

1680. [4162] Mushrooms collected from the stumps of trees (*Agaricus* (*Pleurotus*) *subocreatus*, n.s.), China. COL. COLLYER.

This is a new and apparently undescribed species of *Agaricus* belonging to the sub-genus *Pleurotus*. It is nearly allied to the British *Agaricus ulmarius*, from which it is separated by the volva, remains of which may be traced at the base of the stem. It is a dendrophytal species, drying readily, and is employed in the Straits Settlements as an article of food. If it proves to be really, as it appears to be, a new and undescribed species, the most suitable name would be the one here adopted.†

1681. [6688] Dried Fungi (*Hirneola auricula-Judæ*), Singapore. COL. COLLYER.

This fungus does not appear to differ from our indigenous *Hirneola auricula-Judæ*, which has a wide range, and an almost obsolete reputation in medicine. It is sent as a food product, but, we should imagine, of very little merit.‡

* Local Committee, *Akyab.*
† M. C. COOKE, Esq.
‡ M. C. COOKE, Esq.

SUGARS.

Although the samples of sugar on show are not numerous, a few are of excellent quality. The table subjoined will give the requisite information as to the extent of the Indian export trade in this important article of daily life. (*See pages* 74, 75.)

1682. [5348] Double refined loaf sugar, Shahjehanpore. Messrs. CAREW & Co.

1683. [5350] Crystallized sugar, Do. Do.

1684. [6226] Goor from sugar-cane, Hooghly.

1685. [6228] Sugar-candy, Midnapore.

1686. [7146] Sugar-candy, No. 1, Calcutta.

1687. [7145] Sugar-candy, No. 2, Do.

1688. [2177] Daloo, Calcutta Bazaar.

1689. [2178] Ach Borah (first quality), Do.

1690. [2179] Ach Borah (second quality). Do.

1691. [2180] Dobarrah, Do.

1692. [2181] Cassee Chena, Do.

1693. [6227] Ook or Junnah (*Saccharum officinarum*), Lucknow.

This is the sugar extracted from the above, called by the natives *Cheenee*, partly refined. 4 seers for the rupee. Used for sugar and spirits.*

1694. [6229] Goor (*S. officinarum*), Lucknow.

This is the appearance of the sugar after the first boiling of the cane juice: the natives call it *Goor*. 11 seers per rupee. Used for sugar and spirits.†

1695. [6230] Kund (*S. officinarum*), Lucknow.

This is refined sugar, and called *Kund* by the natives; this is what many of the Europeans use for their tea, coffee, &c. 2 seers per rupee.‡

1696. [3833] Calpee candy, Jubbulpore. THAKOOR RUGHONATH SINGH of Budhowlee.

1697. [2738] Sugar (first quality). ASTAGRAM SUGAR COMPANY.

1698. [2739] Sugar (second quality), Do.

* Central Committee, *Lucknow.*
† Central Committee, *Lucknow.*
‡ Central Committee, *Lucknow.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF SUGAR EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

Years	Whence Exported	Countries whither exported																						Total Exported to all Parts		
		United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Aden		Coast of Africa		New South Wales		Ceylon		Other Parts		Quantity		Value
		Quantity	Value	Quan.	Value	Quan.	Value	Quan.	Value	Qua.	Val.	Quan.	Value	Quan.	Val.	Quan.	Val.	Quan.	Value	Quan.	Value	Quan.	Value			
		cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1850-51	Bengal	1,190,454	1,505,487	1,508	1,792	178	206	..	..	..	..	4,942	5,739	..	..	..	..	4,225	4,131	1,785	2,137	1,539	2,035	1,204,631	60,232	1,521,527
	Madras	290,147	199,681	..	..	..	..	..	..	..	..	3	1	..	..	..	..	159	81	1,829	1,943	1,298	742	293,436	14,672	202,448
	Bombay	8,278	4,575	..	..	..	..	..	..	..	..	80,646	90,505	2,812	2,682	1,545	1,777	..	..	..	..	283	275	93,564	4,678	99,814
	All India	1,488,879	1,709,743	1,508	1,792	178	206	..	..	..	..	85,591	96,245	2,812	2,682	1,545	1,777	4,384	4,212	3,614	4,080	3,120	3,052	1,591,631	79,582	1,823,789
1851-52	Bengal	1,106,298	1,425,059	2,113	2,875	1,360	1,551	1,735	2,362	..	..	2,202	2,496	..	..	..	..	7,645	9,922	4,746	5,413	1,985	2,243	1,128,084	56,404	1,451,921
	Madras	399,753	264,093	2,775	1,489	..	..	..	..	..	..	..	..	..	..	..	..	7,113	4,222	2,435	2,107	61	52	412,137	20,607	271,963
	Bombay	..	..	..	..	..	..	..	..	..	..	63,456	73,088	1,610	1,825	1,866	2,282	..	..	..	..	355	581	67,287	3,364	77,776
	All India	1,506,051	1,689,152	4,888	4,364	1,360	1,551	1,735	2,362	..	..	65,658	75,584	1,610	1,825	1,866	2,282	14,758	14,144	7,181	7,520	2,401	2,876	1,607,508	80,375	1,801,660
1852-53	Bengal	1,048,236	1,376,128	..	..	153	208	2,876	3,917	..	..	2,471	2,591	..	..	..	..	20,752	27,691	2,576	2,880	6,600	6,896	1,083,264	54,163	1,420,311
	Madras	307,624	228,346	..	..	..	..	461	206	..	..	..	..	..	..	..	..	20,471	9,738	3,271	2,781	115	134	331,942	16,597	241,205
	Bombay	770	847	..	..	..	..	..	..	..	..	57,023	62,286	2,164	2,380	1,999	2,200	89	98	..	..	396	435	62,441	3,122	68,246
	All India	1,356,630	1,605,321	..	..	153	208	3,317	4,123	..	..	59,494	64,877	2,164	2,380	1,999	2,200	41,312	37,527	5,847	5,661	7,111	7,465	1,477,647	73,882	1,729,762
1853-54	Bengal	458,429	478,652	1,667	2,269	..	..	1,004	1,367	48	65	4,560	5,998	662	907	..	..	30,034	40,865	2,960	4,016	954	1,306	500,318	25,016	535,445
	Madras	493,712	305,982	..	..	..	..	..	..	..	..	1,197	658	..	..	..	..	7,774	4,112	1,035	709	46	28	503,764	25,188	311,489
	Bombay	22	24	..	..	..	..	..	..	..	..	78,633	85,578	3,067	3,374	2,078	2,286	..	..	..	..	172	190	83,972	4,199	91,452
	All India	952,163	784,658	1,667	2,269	..	..	1,004	1,367	48	65	84,390	92,234	3,729	4,281	2,078	2,286	37,808	44,977	3,995	4,725	1,172	1,524	1,088,054	54,403	938,386
1854-55	Bengal	520,431	696,040	12,616	17,173	1,411	1,922	14,903	3,148	45	62	18,939	21,099	..	..	..	..	54,131	73,383	4,419	5,038	2,342	2,933	629,237	31,462	820,798
	Madras	187,954	145,825	..	..	..	..	..	..	..	..	41	32	..	..	..	..	17,273	8,744	1,573	1,180	..	2	206,841	10,342	155,783
	Bombay	362	452	..	..	..	..	..	..	..	..	102,121	127,551	1,661	2,076	2,262	2,828	..	..	27	34	429	535	106,862	5,343	133,476
	All India	708,747	842,317	12,616	17,173	1,411	1,922	14,903	3,148	45	62	121,101	148,682	1,661	2,076	2,262	2,828	71,404	82,127	6,019	6,252	2,771	3,470	942,940	47,147	1,110,057
1855-56	Bengal	607,117	782,512	7,771	9,322	12,028	15,834	21,340	28,239	1,100	1,490	3,259	3,888	97	99	..	..	67,772	86,534	7,158	8,900	2,416	3,157	730,058	36,503	939,975
	Madras	430,280	279,897	..	..	..	..	..	..	..	..	352	377	..	..	..	..	..	..	2,499	1,770	13	20	433,144	21,657	282,064
	Bombay	28,728	30,004	..	..	..	..	..	..	..	..	79,683	87,832	3,435	3,721	1,534	1,688	..	..	180	200	298	338	113,858	5,693	123,783
	All India	1,066,125	1,092,413	7,771	9,322	12,028	15,834	21,340	28,239	1,100	1,490	83,294	92,097	3,532	3,820	1,534	1,688	67,772	86,534	9,837	10,870	2,727	3,515	1,277,060	63,853	1,345,822
1856-57	Bengal	755,982	1,028,982	43,190	58,787	61,493	83,700	50,265	68,417	4,190	5,704	7,115	9,686	370	504	..	..	53,434	72,731	3,739	5,088	8,446	11,445	988,224	49,411	1,345,044
	Madras	502,281	355,118	585	491	132	242	..	..	..	..	491	551	..	..	..	..	..	..	1,696	1,123	33	38	505,218	25,261	357,563
	Bombay	8,929	5,364	..	..	..	..	..	..	..	..	61,922	73,051	1,323	1,328	2,586	3,232	..	..	69	86	400	408	75,229	3,761	83,469
	All India	1,267,192	1,389,464	43,775	59,278	61,625	83,942	50,265	68,417	4,190	5,704	69,528	83,288	1,693	1,832	2,586	3,232	53,434	72,731	5,504	6,297	8,879	11,891	1,568,671	78,433	1,786,076
1857-58	Bengal	419,808	562,326	9,795	13,231	13,248	17,874	33,405	43,689	..	..	16,011	21,893	783	1,090	..	..	19,320	25,717	4,002	6,359	1,571	2,004	517,943	25,897	694,183
	Madras	329,654	331,116	23,449	22,458	..	..	5,035	5,318	..	..	80	48	..	..	..	..	6,993	6,339	934	895	19	22	366,164	18,308	366,196
	Bombay	2,283	2,740	..	..	..	..	..	..	..	..	68,845	81,749	3,653	5,316	2,894	3,473	..	..	104	125	242	293	78,021	3,901	94,299
	All India	751,745	896,182	33,244	35,689	13,248	17,874	38,440	49,007	..	..	84,936	103,690	4,436	7,009	2,894	3,473	26,313	32,056	5,040	7,379	1,832	2,319	962,128	48,106	1,154,678
1858-59	Bengal	662,528	933,980	1,109	1,510	3,375	4,594	15,519	26,567	211	287	4,829	6,903	800	1,089	..	..	64,878	88,299	7,797	11,630	8,991	12,343	770,037	38,502	1,087,202
	Madras	233,175	211,187	1,572	1,408	..	..	..	..	..	..	373	450	..	..	..	..	1,780	1,569	928	1,006	43	32	237,871	11,894	215,652
	Bombay	445	476	..	..	..	..	..	..	..	..	98,751	117,946	2,459	2,811	3,877	4,658	..	..	88	106	266	319	105,886	5,294	126,311
	All India	896,148	1,145,643	2,681	2,918	3,375	4,594	15,519	26,567	211	287	103,953	125,299	3,259	3,900	3,877	4,653	66,658	89,868	8,813	12,742	9,300	12,694	1,113,794	55,690	1,429,165
1859-60	Bengal	381,611	534,325	..	..	16,508	23,110	11,756	16,458	127	178	11,186	15,660	813	1,138	..	..	45,762	64,066	4,749	6,649	13,477	18,869	485,989	24,299	680,453
	Madras	304,022	243,917	..	..	..	..	..	..	3	5	100	119	..	..	..	..	2,935	1,982	1,933	2,141	12	6	309,002	15,450	248,170
	Bombay	1,857	2,228	..	..	..	..	..	..	..	..	58,469	70,040	3,180	3,817	1,225	1,470	..	..	..	..	279	336	65,010	3,251	77,891
	All India	687,490	780,470	..	..	16,508	23,110	11,756	16,458	130	183	69,755	85,819	3,993	4,955	1,225	1,470	48,697	66,048	6,682	8,790	13,768	19,211	860,001	43,000	1,006,514
1860-61	Bengal	380,904	571,336	2	3	16,326	24,491	19,711	29,566	365	548	16,991	25,187	1,884	2,825	157	235	34,221	51,331	6,518	9,776	3,092	4,638	480,171	24,009	719,936
	Madras	313,902	253,410	223	112	..	..	..	..	..	..	409	364	..	..	..	..	..	..	2,898	2,637	..	1	317,432	15,872	256,524
	Bombay	1,206	964	..	..	..	..	..	..	..	..	42,343	49,253	2,990	3,557	1,327	1,592	..	..	150	180	342	410	48,358	2,418	55,956
	All India	696,012	825,710	225	115	16,326	24,491	19,711	29,566	365	548	59,743	74,804	4,874	6,382	1,484	1,827	34,221	51,331	9,566	12,593	3,434	5,049	845,961	42,299	1,032,416

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF MOLASSES OR JAGREE EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857-58 TO 1860-61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Other Parts		Total Exported to all Parts		
		Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quantity		Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1857-58	Bengal	9,884	1,427	..	..	..	..	681	307	1	1	..	..	* 2,690	* 733	13,256	663	2,468
	Madras	59,122	25,630	1,270	578	..	..	..	..	..	..	1,296	326	* 5,877	* 2,346	67,565	3,378	28,880
	Bombay	..	14	..	..	..	..	..	..	..	..	..	2,043	..	619	..	..	2,676
	All India		27,071	1,270	578	..	..	681	307	1	1	..	2,369	..	3,698	..	..	34,024
1858-59	Bengal	1,911	650	..	..	..	..	..	..	..	..	..	..	* 5,824	* 2,207	7,735	387	2,857
	Madras	79,769	35,496	..	..	..	..	..	..	..	..	164	49	† 2,584	† 751	82,517	4,126	36,296
	Bombay	104	82	..	..	..	..	..	..	..	..	2,302	893	‡ 1,050	‡ 425	3,456	173	1,400
	All India	8,1784	36,228	..	..	..	..	..	..	..	..	2,466	942	9,458	3,383	93,708	4,686	40,553
1859-60	Bengal	1,532	201	..	..	..	..	..	..	..	..	..	..	* 11,358	* 1,546	12,890	644	1,747
	Madras	63,154	28,023	..	..	..	..	..	..	..	..	85	26	† 2,991	† 994	66,230	3,312	29,043
	Bombay	..	..	..	..	..	..	..	..	..	..	3,240	1,288	‡ 2,231	‡ 875	5,471	274	2,163
	All India	64,686	28,224	..	..	..	..	..	..	..	..	3,325	1,314	16,580	3,415	84,591	4,230	32,953
1860-61	Bengal	6,639	2,656	..	..	392	157	7	3	..	..	..	..	36	14	7,074	354	2,830
	Madras	41,144	15,884	..	..	..	..	..	..	..	..	28	9	† 2,826	† 972	43,998	2,200	16,865
	Bombay	36	13	..	..	..	..	..	..	..	..	3,184	1,471	‡ 300	‡ 322	3,520	176	1,806
	All India	47,819	18,553	..	..	392	157	7	3	..	..	3,212	1,480	3,162	1,308	54,592	2,730	21,501

* Principally to New South Wales. † Principally to Ceylon. ‡ Principally to Aden and Coast of Africa.

1699. [2740] Sugar (third quality). ASTAGRAM SUGAR COMPANY.

1700. [10576] Sugar, North Arcot. P. SUBBAIA CHETTI.

1701. [10577] Sugar, Do. S. VENKATRAMANA CHETTI.

1702. [4778] Jaggery, Rangoon. Messrs. HALLIDAY, FOX & Co.

1703. [4781] Sugar, Do.

1704. [4149] Sugar from Caledonia Estate, Penang, the property of RIGHT HON. E. HORSMAN, M.P.

1705. [4150] Sugar.

1706. [4183] Sugar from Golden Grove Estate, Province Wellesley. Do.

1707. [4184] Cane sugar from Province Wellesley. Grown and manufactured on the Chinese system by JOW KAM MEAH, at Songhy Bakow.

1708. [4185] Cane sugar, Do. by TEO AH TOO, at Songhy Bakow.

1709. [4186] Cane sugar. Grown and manufactured on the Chinese system by JOW KAM MEAH, at Songhy Bakow.

1710. [4187] Cane sugar. Do. on Golden Grove Estate. RIGHT HON. E. HORSMAN, M.P.

1711. [4188] Cane sugar. Grown and manufactured on the Chinese system by TEO AH TOO, at Songhy Bakow, Province Wellesley.

1712. [6667] Molasses (first quality), Singapore. JOSE D'ALMEIDA, Esq.

1713. [6666] Molasses (second quality), Singapore. JOSE D'ALMEIDA, Esq.

The Date Palm (*Elate sylvestris*) furnishes almost the whole of the sugar exported in such considerable quantities from Calcutta.

1714. [7139] Kasee chinnee (*E. sylvestris*), Calcutta.

1715. [7140] Dhoba batta (*E. sylvestris*), Do.

1716. [7141] Suckhur (*E. sylvestris*), Do.

1717. [7144] Ball sugar, 'Oullah' (*E. sylvestris*), Do.

1718. [7142] Crushed sugar (*do.*), Do.

1719. [7143] Refined sugar (*do.*), Do.

1720. [6225] Goor from date juice (*E. sylvestris*), Do.

1721. [6231] Goor, Beerbhoom.

MR. S. H. ROBINSON, of Calcutta, makes the following remarks on the date palm, and the manufacture of date sugar in Bengal:—

NATIONAL ARCHIVES OF INDIA

The date tree is met with in almost every part of Bengal Proper, but it flourishes most congenially, and is found plentifully only in the alluvial soils which cover its south-eastern portion, excepting only such tracts as suffer entire submersion annually from the overflow of their rivers, as is common in portions of the Dacca, Mymensing, and Sunderbund districts. The extent of country best suited for its growth, and over which it is found most plentifully as above indicated, may therefore be taken as within an area stretching east and west about 200 miles, and north and south about 100 miles, and comprehending by a rough estimate about 9,000 square miles within an irregular triangular space.

When not stunted in its growth by the extraction of its juice for sugar, it is a very handsome tree, rising in Bengal from 30 to 40 feet in height, with a dense crown of leaves spreading in a hemispherical form from its summit. These leaves are from 10 to 15 feet long, and composed of numerous leaflets or pinules about 18 inches long. The trunk is rough, from the adherence of the bases of the falling leaves; this serves to distinguish it at a glance from the smooth-trunked cocoa-nut palm, which in its leaves only it resembles. The fruit consists more of seed than of pulp, and altogether is only about one-fourth the size of the Arabian kind brought annually to Calcutta for sale, and, when fresh imported, a rich and favourite fruit there. This inferiority of the Bengal fruit may no doubt be attributed to the entire neglect of its improvement there from time immemorial, and, perhaps, in some measure, to the practice of tapping the trees for their sap, so universally followed in the districts around Calcutta, its principal range of growth.

The process of tapping and extracting the juice commences about the 1st of November, and terminates about the 15th of February. Some days previously, the lower leaves of the crown are stripped off all round, and a few extra leaves from the side of the tree intended to be tapped. On the part thus denuded, a triangular incision is made with a knife, about an inch deep, so as to penetrate through the cortex, and divide the sap vessels; each side of the triangle measuring about 6 inches, with one point downwards, in which is inserted a piece of grooved bamboo, along which the sap trickles, and from thence drops into an earthen pot suspended underneath it by a string. The pots are suspended in the evening, and removed very early the following morning, ere the sun has sufficient power to warm the juice, which would cause it immediately to ferment, and destroy its quality of crystallizing into sugar.

The cutting being made in the afternoon, next morning the pot is found to contain, from a full-grown tree, 10 seers of juice, the second morning 4 seers, and the third morning 2 seers of juice; the quantity exuding afterwards is so small that no pot is suspended for the next four days.

Daily at sunrise throughout the goor season, the industrious ryot may be seen climbing his trees, and collecting at a convenient spot beneath them the earthen pots containing the juice yielded during the past night. Under a rude shed, covered with the leaves of the date tree itself, and erected under the shade of the plantation, is prepared the boiling apparatus to serve for the goor season. It consists of a hole of about 3 feet in diameter, sunk about 2 feet in the ground, over which are supported by mud arches four thin earthen pans of a semi-globular shape, and 18 inches in diameter; the hole itself is the furnace, and has two apertures on opposite sides for feeding in the fuel, and for escape of the smoke. The fire is lit as soon as the juice is collected, and poured into the four pans, which are kept constantly supplied with fresh juice as the water evaporates, until the whole produce of the morning is boiled down to the required density. As the contents of each pan becomes sufficiently boiled, they are ladled out into other earthen pots or jars, of various sizes, from 5 to 20 seers of contents, according to local custom, and in these the boiled extract cools, crystallizes into a hard compound of granulated sugar and molasses, and is brought to market for sale as *goor*.

The subsequent processes by which the goor is deprived more or less of its molasses and impurities are too long to be detailed.

1722. [6880] Dhannee (*Nipa fruticans*), Moulmein.

This molasses is made out of a plant called *Dhannee*.*

1723. [52*] Nipa sugar (*N. fruticans*).

1724. [59*] Gomuti palm sugar (*Borassus flabelliformis*), Java.

1725. [5187] Palm sugar (*do.*), Burmah.

This coarse substitute for sugar is obtained from the toddy of the Palmyra tree. The sugar-cane grows and thrives admirably in Pegu, but it is not very largely cultivated, and none but the very coarsest sugar is manufactured from it.†

ANIMAL FOOD PRODUCTS.

Fish Maws and Shark Fins.

As will be gathered from the tables (p. 77), these form a considerable article of export.

1726. [6703] Fish maw, Eastern Archipelago. G. ANGUS, Esq.

1727. [5579] Fish maw, Akyab.

1728. [5580] White shark fins, Do.

1729. [5581] Black shark fins, Akyab.

1730. [5582] White shark back fins, Do.

1731. [4157] Edible birds' nests (*Collocalia nidifica*) from islands adjoining Junk Ceylon.

1732. [4158] Edible birds' nests, Do. Do.

1733. [4159] Edible birds' nests, Do. Do.

1734. [4160] Edible birds' nests, Do. Do.

1734A. [7360] Edible birds' nests, Burmah.

This is the celebrated luxury of the Chinese, for which they will exchange its weight in silver. It is boiled into soup, and is valued more for its supposed property of imparting vigour to an impaired constitution than for the taste or flavour. The nest is composed of a mucilage, formed in the crop of a small sea bird, '*Collocalia fuciphaga*,' and being ejected in small portions at a time, becomes gradually compacted into a nest.

The nests are found in caves and clefts in the cliffs along the sea shore.

1735. [4155] Beche de Mer or Trepang (*Holothuria*, species of,) Penang.

* Local Committee, *Moulmein.*
† Local Committee, *Rangoon.*
‡ Local Committee, *Rangoon.*

NATIONAL ARCHIVES OF INDIA

1736. [6671] Beche de Mer or Trepang, Eastern Archipelago.

1737. [4156] Beche de Mer or Trepang, Penang.

1738. [4153] Dried shell fish, Penang.

1739. [4154] Dried shell fish, Do.

1740. [2367] Coorg honey, from Mysore.

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF FISH MAWS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

Years	Whence Exported	Countries whither exported: United Kingdom		China		Other Parts		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1857-58	Bengal	..	..	42	265	7,237	1,208	7,279	364	1,473
	Madras	2	4	..	..	15	44	17	1	48
	Bombay	36	184	1,587	7,273	33	84	1,656	83	7,541
	All India	38	188	1,629	7,538	7,285*	1,336*	8,952	448	9,062
1858-59	Bengal	..	..	113	770	128	525	241	12	1,295
	Madras	..	..	..	..	2	3	2	..	3
	Bombay	180	899	1,449	6,271	..	..	1,629	81	7,170
	All India	180	899	1,562	7,041	130*	528*	1,872	93	8,468
1859-60	Bengal	..	..	..	431	138	507	..	..	938
	Madras	32	91	2	6	39	111	73	4	208
	Bombay	253	1,247	1,184	5,054	..	..	1,437	72	6,301
	All India	285	1,338	..	5,491	177*	618*	..	..	7,447
1860-61	Bengal	..	..	..	137	..	..	..	..	137
	Madras	68	279	2	10	47	171	117	6	460
	Bombay	733	2,876	854	2,928	..	..	1,587	79	5,804
	All India	801	3,155	..	3,075	47*	171*	..	..	6,401

* Comprise exports to Straits Settlements.

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF SHARK FINS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

Years	Whence Exported	Countries whither exported: United Kingdom		China		Other Parts*		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1857-58	Bengal	..	..	..	..	..	..	..	..	..
	Madras	1	2	..	..	218	651	219	11	653
	Bombay	..	..	7,433	18,338	15	44	7,448	352	18,382
	All India	1	2	7,433	18,338	233	695	7,667	363	19,035
1858-59	Bengal	..	..	..	..	..	..	..	..	..
	Madras	4	10	..	..	229	676	233	12	686
	Bombay	..	..	8,062	16,126	2	5	8,064	403	16,131
	All India	4	10	8,062	16,126	231	681	8,297	415	16,817
1859-60	Bengal	..	..	..	..	..	..	..	..	..
	Madras	..	..	..	..	148	469	148	7	469
	Bombay	..	..	6,216	12,435	..	..	6,216	311	12,435
	All India	..	..	6,216	12,435	148	469	6,364	318	12,904
1860-61	Bengal	..	..	..	..	..	..	..	..	..
	Madras	..	..	84	222	101	362	185	9	584
	Bombay	..	..	5,564	11,127	..	..	5,564	278	11,127
	All India	..	..	5,648	11,349	101	362	5,749	287	11,711

* Consisting of the Straits Settlements only.

NATIONAL ARCHIVES OF INDIA

SECTION C.—SPIRITS; INTOXICATING OR STIMULATING DRUGS, ETC.

1741. [10689] Palmyra arrack (*Borassus flabelliformis*), Mangalore. V. P. COELHO, Esq.

Other interesting arracks sent by V. P. COELHO were lost in transit by the breaking of the bottles.

1742. [5717] Sugar-cane spirit (*Saccharum officinarum*), Lucknow.

1743. [2746] Spirits of wine. ASTAGRAM SUGAR COMPANY.

1744. [2172*] Country spirit (*Backur Khatee*), Calcutta.

1745. [2174*] Country rum, Do.

1746. [10129] Rum, Calcutta. KANNY LOLL DEY.

1747. [10128] Doasta or country spirit, Do. Do.

1748. [6415] Medicinal arrack, Singapore. TAN KIM SING.

1749. [2747] Rum, Mysore. ASTAGRAM SUGAR COMPANY.

1750. [6340] Rum, Singapore. JOSE D'ALMEIDA, Esq.

1751. [5351] Rum, Shahjehanpore. Messrs. CAREW & Co.

1752. [5728] Rice arrack (*Oryza sativa*), Cuttack.

A spirit distilled from rice. This is the only distilled spirit used by the natives of this province, and that only by those of the lower classes. It is the same to the use of which the wild tribes of Orissa, the Khonds, Sahars, and Coles are so addicted. It is unpalatable and nauseous. It is made 25 below London proof, 1 maund of rice making 8 gallons. An intoxicating spirit is distilled also in the Sumbulpore district, chiefly from the fruit or flower of the *Bassia latifolia*, the *Mahool, as locally called.* This tree is also met with throughout the forest jungles of this province: the sweet fruit or flower is a favourite food of wild animals, especially the bear, and it is believed that the saccharine matter, which apparently abounds in the fruit or flower, whichever it may be, might be turned to the very best account.*

1753. [4196] Rice arrack, from Penang rice, Penang.

1754. [5727] Chellee, Midnapore.

1755. [5726] Chellee, Do.

1756. [2168] Country spirit, Cumlaha, Calcutta.

1757. [2173] Country spirit, Pattaha, Calcutta.

1758. [2167] Country spirit, Allachee, Calcutta.

1759. [2169] Country spirit, Aumish, Calcutta.

1760. [2171] Country spirit, Atturee, Calcutta.

1761. [2170] Country spirit, Joobabee, Calcutta.

These ardent spirits are distilled from sugar-cane, and used by the Hindoos of the lower order. Backerkatee is the spirit distilled in which cardamom is put and weakened with water, and called 'Allachee;' 'Cumlaha' with orange peel; 'Joobabee' and 'Pattaha' are adulterated with tobacco leaf, and 'Atturee' is scented with uttur. 'Aunish' is the only pure spirit distilled from aniseed.

1762. [1934] Mango spirit (*Mangofera indica*), Malda. DR. THOMPSON.

Prepared from the mango, a fruit well known, cheap, and to be had in abundance in Bengal and in many parts of India. The taste of the spirit is not unlike whisky, and far superior to anything of the sort sold in our Indian bazaar for every purpose to which the latter is applied. The specific gravity of that in the phial is about 903·5, which at a temperature of 80° F. gives about 60 per cent. of alcohol to the volume of spirit.

OPIUM.

The extent to which this drug is exported to China and other parts, is shown by the Table. (*See next page.*)

Series Illustrative of the Manufacture of Opium at Patna.

1763. [5378] Poppy seed (*Papaver somniferum*).

1764. [5379] Poppy-seed oil.

1765. [42*] Poppy capsules as cut by the nushtur for the purpose of collecting the opium.

1766. [6535½] Nushtur for scratching the capsules.

1767. [5380] Abkaree opium cake.

1768. [5381] Medicinal opium cake.

1769. [5382] Bottle of lewah.

1770. [ ] Tawa or iron plate.

1771. [5383] Bottle of morphia.

1772. [5384] Bottle of narcotine.

* Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF OPIUM EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

Years	Whence Exported	Countries whither exported: America Quantity	America Value	Ceylon Quantity	Ceylon Value	China Quantity	China Value	Java and Sumatra Quantity	Java and Sumatra Value	Pegu and the Straits Quantity	Pegu and the Straits Value	New South Wales Quantity	New South Wales Value	Other Parts Quantity	Other Parts Value	Total Exported to All Parts Quantity	Total Exported to All Parts Quantity	Total Exported to All Parts Value
		chests	£	chests	£	chests	£	chests	£	chests	£	chests	£	chests	£	chests	tons*	£
1850-51	Bengal	..	..	..	..	28,892	2,777,518	100	9,206	3,910	368,350	..	..	..	..	32,902	2,203	3,155,074
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	19,138	2,296,560	..	..	62	7,506	..	..	..	..	19,200	1,286	2,304,060
	All India	..	..	..	..	48,030	5,074,078	100	9,206	3,972	375,850	..	..	..	..	52,102	3,489	5,459,134
1851-52	Bengal	..	..	..	..	27,921	2,713,469	50	5,035	4,335	419,277	..	..	..	..	32,306	2,163	3,137,781
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	28,168	3,368,838	..	..	73	8,485	..	..	1	110	28,242	1,891	3,377,433
	All India	..	..	..	..	56,089	6,082,307	50	5,035	4,408	427,762	..	..	1	110	60,548	4,054	6,515,214
1852-53	Bengal	..	..	..	..	31,433	3,482,948	..	..	4,745	537,146	..	..	..	..	36,178	2,422	4,020,094
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	24,979½	2,987,967	..	..	239	25,950	..	..	½	64	25,219	1,689	3,013,981
	All India	..	..	..	..	56,412½	6,470,915	..	..	4,984	563,096	..	..	½	64	61,397	4,111	7,034,075
1853-54	Bengal	..	..	..	..	33,941	3,069,895	..	..	7,970	618,485	5	481	1	102	41,917	2,807	3,688,963
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	26,113	2,732,574	..	..	142	15,380	..	..	2	181	26,257	1,758	2,748,135
	All India	..	..	..	..	60,054	5,802,469	..	..	8,112	633,865	5	481	3	283	68,174	4,565	6,437,098
1854-55	Bengal	..	..	6	390	43,952	3,150,320	30	2,025	7,430	541,858	2	142	1	81	51,421	3,443	3,694,816
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	18	25,958	2,534,657	..	..	17	1,700	..	..	1	86	25,976	1,739	2,536,461	
	All India	..	..	6	408	69,910	5,684,977	30	2,025	7,447	543,558	2	142	2	167	77,397	5,182	6,231,277
1855-56	Bengal	15	982	10	667	37,851	3,031,735	..	..	7,018	600,457	41	4,847	3	253	44,938	3,009	3,638,941
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	25,576	2,560,797	..	..	90	900	..	..	2	233	25,668	1,719	2,561,930
	All India	15	982	10	667	63,427	5,592,532	..	..	7,108	601,357	41	4,847	5	486	70,606	4,728	6,200,871
1856-57	Bengal	..	..	6	544	36,459	3,276,751	..	..	5,767	522,619	208	18,785	1	104	42,441	2,842	3,818,803
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	29,846	3,228,836	..	..	96	8,600	..	..	2	390	29,944	2,005	3,237,826
	All India	..	..	6	544	66,305	6,505,587	..	..	5,863	531,219	208	18,785	3	494	72,385	4,847	7,056,629
1857-58	Bengal	..	..	..	..	31,878	3,913,086	..	..	6,666	826,309	67	6,534	..	..	38,611	2,586	4,745,929
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	36,125	4,327,945	..	..	229	32,700	..	..	1	60	36,355	2,434	4,360,700
	All India	..	..	..	..	68,003	8,241,031	..	..	6,895	859,009	67	6,534	1	60	74,966	5,020	9,106,629
1858-59	Bengal	..	..	40	5,775	33,858	5,050,103	20	3,217	746	112,299	21	3,235	..	..	34,685	2,322	5,174,629
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	40,849	5,610,548	..	..	288	42,464	..	..	..	..	41,137	2,755	5,653,012
	All India	..	..	40	5,775	74,707	10,660,651	20	3,217	1,034	154,763	21	3,235	..	..	75,822	5,077	10,827,641
1859-60	Bengal	10	1715	..	..	22,329	3,661,830	5	820	3,483	636,110	112	18,785	11	1,813	25,950	1,737	4,321,073
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	32,534	4,704,505	..	..	192	28,120	2	170	3	525	32,731	2,192	4,733,320
	All India	10	1715	..	..	54,863	8,366,335	5	820	3,675	664,230	114	18,955	14	2,338	58,681	3,929	9,054,393
1860-61	Bengal	..	..	..	..	15,714	2,862,168	..	..	3,810	711,066	10	1,860	..	20	19,534	1,308	3,575,114
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	2	..	..	43,691	6,566,719	..	..	263	42,598	..	..	2	280	43,956	2,943	6,609,599
	All India	..	2	..	..	59,405	9,428,887	..	..	4,073	753,664	10	1,860	2	300	63,490	4,251	10,184,713

* In Bengal, about 164 lbs. go to the chest of opium; in Bombay, about 140 lbs. In calculating the amount in tons, 150 has been the factor employed.

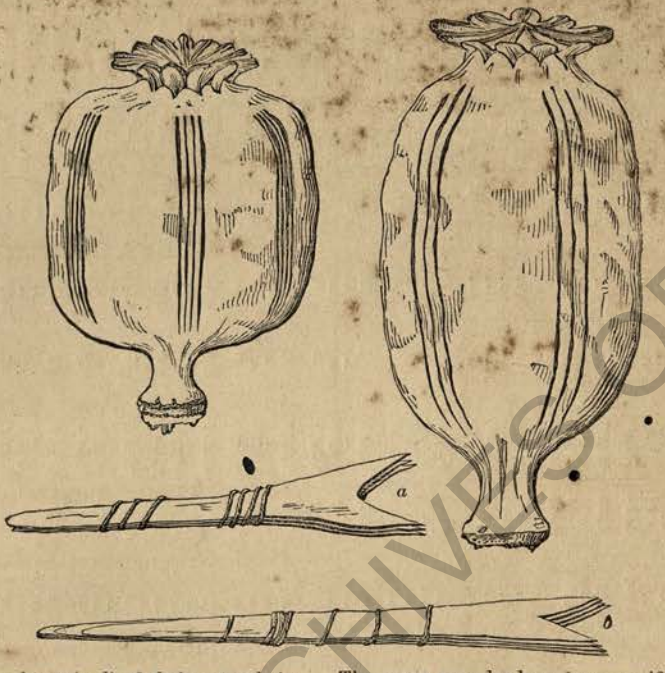
NATIONAL ARCHIVES OF INDIA

1773. [5385] Powdered opium.

1774. [5386] Model of the manufacturer, with attendant and apparatus.

1775. [5387] Provision opium cakes.

1776. [6525] Model mutchan, with wooden balls and earthen cups.



Poppy capsules and nushturs (*a*, *b*) of their natural size. The poppy capsules have been scarified in parallel lines.*

1777. [5388] Jar of opium as received from cultivator.

1778. [6527] Tin tagar.

1779. [6528] Iron lowah.

1780. [6529] Brass moulding cup.

1781. [6530] Brass lowah cup.

1782. [6531] Brass ladle.

1783. [6532] Tin puttee.

1784. [6533] Model provision chest.

1785. [6534] Model Abkara chest.

1786. [6537] Leaves for opium cake.

1787. [6526] Jar and cover for opium.

1788. [6536] Two sitoohas for collecting the opium.

1789. [6537] Press for forming the Abkaree cake.

1790. [6539] Karhaee.

Illustrations of Opium Manufacture, from the Benares Opium Agency.

1791. [5390] Opium cake-maker's seat.

1792. [5391] Lewah measure.

Natives engaged in scraping off the exuded juice.

* Figures illustrating opium manufacture from the *Pharmaceutical Journal.*

NATIONAL ARCHIVES OF INDIA

1793. [5391B] Box of poppy flowers.
1794. [5392] Box of poppy wash.
1795. [5393] Leaves for packing opium.
1796. [5394] Cake mould.
1797. [5389] Ball of provision opium.

Figure representing the section of an opium store.

1798. [5389B] Ball cut in section.
1799. [5414] Ball opium.

Figure showing a native engaged in the manufacture of ball opium.

1800. [7099] Opium from Lucknow.
1801. [10115] Opium, Calcutta.

Other samples of opium have also been received from the Punjab, Ulwar (presented by H.H. the MAHARAJAH), &c. The Lahore Committee state that the opium used in the Punjab comes principally from Kulu, in the Himalayas, but is grown also in the plains, especially in the district of Shahpore. The poppy is, however, grown generally in the Punjab, and a decoction or infusion called 'post' is made by steeping the unripe poppy head in water. Shahpore opium sells at Lahore at 20*s.* per pound.

1802. [1865] Nirmasor (antidote for opium), Punjab.

CHURRUS OR HEMP RESIN.

1803. [10130] Bang (*Cannabis indica*), Calcutta.

1804. [10131] Bang, Calcutta.

1805. [6127] Bang, Ahmedabad.

1806. [6128] Bang, Bombay.

1807. [6129] Gunjah (*C. indica*), Ahmedabad.

1808. [6131] Gunjah, Poonah.

1809. [2891] Majoom.

1810. [10134] Sidee majoon, Bengal.

1811. [1853] Bang prepared with sugar, Punjab.

1812 [10132] Churrus or hemp resin, Nepaul.

1813. [10133] Churrus or hemp resin, Gorruckpore.

1814. [6557] Churrus or hemp resin, Lucknow.

The narcotic properties of hemp become concentrated in a resinous juice, which in certain seasons and in tropical countries exudes and concretes on the leaves, slender stems and flowers. This constitutes the base of all the hemp preparations. to which all the powers of the drug are attributable. In Central India, the hemp resin, called *churrus*, is collected during the hot season in the following manner:—Men clad in leathern dresses run through the hemp fields, brushing through the plants with all possible violence: the soft resin adheres to the leather, and is subsequently scraped off and kneaded into balls, which sell at from 5 to 6 rupees the seer, or about 5*s.* or 6*s.* per pound. A still finer kind, the *momeca* or waxen churrus, is collected by the hand in Nepaul, and sells for nearly double the price of the ordinary kind. Dr. M'Kinnon says—'In Nepaul, the leathern attire is dispensed with, and the resin is collected on the skin of naked coolies.' In Persia the churrus is obtained by pressing the resinous plant on coarse cloths, and then scraping it from these and melting it in a pot with a little warm water. Mirza considers the churrus of Herat the most powerful of all the varieties of the drug. The hemp resin, when pure, is of a blackish grey colour, with a fragrant narcotic odour, and a slightly warm, bitterish, acrid taste.

NATIONAL ARCHIVES OF INDIA

1815. [7000] Gunjah (a substitute, and not the true *Cannabis indica*).

1816. [10735] Betel nuts (*Areca catechu*), Mangalore. V. P. COELHO, Esq.

BETEL NUT PALM.*

1817. [4067] Betel nuts (*A. catechu*).

1818. [4109] Betel nuts. Penang.

1819. [10729] Betel nuts. Mangalore. V. P. COELHO, Esq.

1820 [4776] Betel nuts. Burmah. Messrs. HALLIDAY, FOX & Co.

1821. [4792] Betel nuts. Do. Do. Do.

1822. [2700] Betel nuts. Mysore.

1823. [5367] Betel nut cutter. Bengal.

The Areca palm, which supplies the betel nut, is known by the Malay name *Pinang*, whence also the name of the island Penang, which is now the chief emporium of the trade. There are various kinds in use, and the mode of preparation also differs. The three ingredients of the betel nut, as commonly used, are, the sliced nut, the leaf of the betel pepper in which the nut is rolled, and chunam or powdered lime, which is smeared over the leaf.

Of the absolute quantity of betel nuts which are employed no accurate estimate can be given. Prof. Johnston calculated that they are chewed by at least fifty millions of the human race.

1824. [10748] Byne seeds (*Caryota urens*) (substitute for Betel nuts), Mangalore. V. P. COELHO, Esq.

* Received from MR. R. HARDWICKE, Piccadilly.

1825. [3260] Imitation paun in clay, Bengal.

1826. [9388] Chunam or powdered shell lime.

1827. [6126] *Datura hammatii*, var. *fastuosa*, Ahmedabad.

To facilitate theft, and for other criminal purposes, the seeds mixed with sweetmeats are very commonly administered in Bengal. The individual sinks into profound lethargy: the respiration is natural, but the pupils of the eye become greatly dilated. These symptoms have been known to continue two days.

1828. [7442] White gambir.

1829. [6662] Gambir (*Nauclea gambir*), Malay Peninsula.

1830. [5342] Catechu (*Acacia catechu*), Lucknow.

1831. [10102] Kaha kehan (spiced catechu), Calcutta.

TOBACCO.

The Table (p. 83) shows the quantity exported to all parts.

1832. [2682] Tobacco (*Nicotiana tabacum*), Mysore.

1833. [4097] Tobacco, Province Wellesley.

1834. [4098] Leaf Tobacco, Bukel Matagam, Do.

1835. [4170] Tobacco, Penang.

1836. [470] Tobacco, Do.

1836A. [7367] Tobacco, Moulmein.

1837. [1485] Tobacco, Rangoon. Messrs. HALLIDAY, FOX & Co.

1838. [5324] Tobacco, Akyab, Arracan.

1839. [5325] Tobacco, Sandoway.

1840. [5326] Tobacco Do. Do.

1841. [5327] Tobacco, Rangoon.

1842. [5328] Tobacco, Cuttack.

1843. [5335] Tobacco Do. Do.

1844. [5337] Tobacco, Assam Do. LIEUT. W. PHAIRE.

1845. [6125] Tobacco, Ahmedabad.

1846. [6130] Tobacco, Poona.

1847. [6556] Tobacco, Midnapore.

1848. [6558] Tobacco, Lucknow.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF TOBACCO EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850-51 TO 1860-61.

Years	Whence Exported	United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Other Parts*		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850-51	Bengal	..	1,494	..	77	..	4	..	636	..	21	..	166	..	7,564	..	..	9,962
	Madras	..	131	..	..	..	..	..	..	..	..	..	33	..	10,983	..	..	11,147
	Bombay	827	260	..	..	..	..	..	..	394	16	103,483	3,869	16,609	619	121,313	54	4,764
	All India	..	1,885	..	77	..	4	..	636	..	37	..	4,068	..	19,166	..	..	25,873
1851-52	Bengal	..	1,452	..	7	37,968	135	..	641	..	..	..	..	..	5,478	..	..	7,713
	Madras	..	192	..	3	..	..	..	..	..	2	..	55	..	13,040	..	..	13,292
	Bombay	431	307	..	..	..	..	5	2	130	7	47,579	1,828	6,549	308	54,694	24	2,452
	All India	..	1,951	..	10	37,968	135	..	643	..	9	..	1,883	..	18,826	..	..	23,457
1852-53	Bengal	..	242	..	10	..	..	..	433	..	..	..	32	..	5,559	..	..	6,276
	Madras	..	43	..	3	..	..	..	..	..	2	..	44	..	12,509	..	..	12,601
	Bombay	432	152	..	..	..	..	..	..	261	3	2,312	143	12,885	652	15,890	7	950
	All India	..	437	..	13	..	..	..	433	..	5	..	219	..	18,720	..	..	19,827
1853-54	Bengal	..	2,693	..	451	..	..	..	511	..	35	..	112	..	9,940	..	..	13,742
	Madras	..	34	..	1	..	..	..	..	..	..	..	6	..	5,574	..	..	5,615
	Bombay	349	175	..	..	..	..	..	..	227	9	1,248	98	123,355	4,779	125,179	56	5,061
	All India	..	2,902	..	452	..	..	..	511	..	44	..	216	..	20,293	..	..	24,418
1854-55	Bengal	..	1,115	..	447	..	..	6,832	252	..	71	45,808	226	..	5,921	..	..	8,032
	Madras	..	151	..	37	..	..	..	..	..	4	..	10	..	10,005	..	..	10,207
	Bombay	605	23	..	..	..	..	..	..	16	1	4,698	364	57,332	2,212	62,651	28	2,600
	All India	..	1,289	..	484	..	..	6,832	252	..	76	50,506	600	..	18,138	..	..	20,839
1855-56	Bengal	..	3,306	..	742	28,896	129	..	224	..	453	18,816	90	..	7,925	..	..	12,869
	Madras	..	223	..	33	..	..	..	..	..	1	..	1	..	7,496	..	..	7,754
	Bombay	1,032	388	166	5	..	..	..	..	..	..	5,016	464	13,714	1,008	19,928	9	1,865
	All India	..	3,917	..	780	28,896	129	..	224	..	454	23,832	555	..	16,429	..	..	22,488
1856-57	Bengal	..	8,645	..	432	495,264	2,443	..	332	..	97	50,960	248	..	15,224	..	..	27,421
	Madras	..	118	..	8	..	54	..	4	..	..	..	6	..	7,549	..	..	7,739
	Bombay	1,057	361	..	..	..	..	..	..	11	2	298,796	1,998	13,491	441	313,355	140	2,802
	All India	..	9,124	..	440	..	2,497	..	336	..	99	349,756	2,252	..	23,214	..	..	37,962
1857-58	Bengal	..	27,147	232,288	1,290	162,260	1,022	18,612	243	5,852	51	18,340	141	..	10,027	..	..	39,921
	Madras	..	3,774	..	11	..	837	..	..	..	..	..	2	..	8,206	..	..	12,830
	Bombay	258,644	3,831	1,665	12	19,312	369	..	..	77	9	6,614	363	8,632	1,001	294,944	132	5,585
	All India	..	34,752	..	1,313	..	2,228	18,612	243	5,929	60	24,954	506	..	19,234	..	..	58,336
1858-59	Bengal	..	6,961	..	813	479,388	4,084	..	2,567	644	5	60,088	394	..	16,844	..	..	31,668
	Madras	..	779	..	4	..	..	..	..	..	..	..	40	..	11,370	..	..	12,193
	Bombay	4,467	362	..	..	472	85	..	..	425	36	6,349	476	5,884	497	17,597	8	1,456
	All India	..	8,102	..	817	479,860	4,169	..	2,567	1,069	41	..	910	..	28,711	..	..	45,317
1859-60	Bengal	..	7,058	..	..	797,356	5,723	..	188	12,712	95	..	33	..	11,313	..	..	24,410
	Madras	..	228	..	..	..	..	..	..	..	..	..	..	..	10,944	..	..	11,172
	Bombay	1,008	248	..	..	..	..	..	..	198	5	67,919	1,009	61,641	812	130,766	58	2,074
	All India	..	7,534	..	..	797,356	5,723	..	188	12,910	100	..	1,042	..	23,069	..	..	37,656
1860-61	Bengal	..	760	..	..	..	..	..	179	..	575	18,760	201	..	6,147	..	..	7,862
	Madras	1,134	54	467	9	..	..	..	..	369	8	..	..	996,246	8,596	998,216	445	8,667
	Bombay	459	218	72	16	374	15	..	..	711	21	1,228,247	9,253	483,183	3,731	1,713,046	764	13,254
	All India	..	1,032	539	25	374	15	..	179	..	604	1,247,007	9,454	..	18,474	..	..	29,783

* Consisting chiefly of Mauritius and Bourbon, New South Wales, Aden, Africa, and Straits Settlements.

NATIONAL ARCHIVES OF INDIA

1849. [6673] Tobacco. G. ANGUS, Esq.

1850. [10194] Snuff, Bengal.

1851. [10138] Goolee for smoking, Bengal.

1852. [6506] Carved snuff gourd, Bengal.

1853. [6507] Two carved gourd snuff-boxes, Peshawur.

1854. [2900] Silver hookah, with apparatus, Ulwar. H.H. the MAHARAJAH.

1855. [2918] Tobacco pipe, Arracan.

1856. [10301] Silver pipe, Calcutta.

1857. [5492] Clay hookah, Hooghly.

1858. [5493] Cocoa nut shell hookah, Do.

NATIONAL ARCHIVES OF INDIA

Class IV.

ANIMAL AND VEGETABLE SUBSTANCES USED IN MANUFACTURES.

Section A.—OILS, FATS, AND WAX.

This important section is well represented in the vegetable oil series. But in order to form a correct notion of the wealth of our Indian Empire in this respect, it will be necessary to have regard also to Section D of this class, which embraces the odorous essential oils. The subdivisions of this section have been included under the two headings animal and vegetable fats and oils, as there are so few representatives of the products manufactured from fats.

The tables inserted in this section show the quantities of linseed and other seeds exported.

Division I.—Animal Oils.

1859. [5*] Shark's liver oil, Tellicherry.

1860. [15*] Shark's liver oil.

1861. [7*] 'Seepho' fish oil.

1862. [11*] Neat's-foot oil, Madras.

1863. [10*] Porpoise oil, Patna.

1864. [6338] Minia ekan, fish oil, Seas of Indian Archipelago. G. Angus, Esq.

The samples of beeswax are very good of their kind, and afford at least a general idea of the abundance of this article. (See Table, p. 87.)

1865. [2935] Beeswax, Province of Orissa.

1866. [2581] Beeswax, Chittledroog, Mysore.

1867. [2937] Yellow beeswax, Burmah.

1868. [2936] Yellow beeswax.

1869. [6480] Beeswax, Chota Nagpore.

1870. [6481] Beeswax (second quality), Do.

1871. [2934] Beeswax, Moulmein.

1872. [2938] Beeswax, Ulwar. H.H. the Maharajah.

1873. [2865] Beeswax, Raepore.

SOAP AND CANDLES.

1874. [7138] Soap, Lucknow.

1875. [1899] Country Soap, Bengal, Kanny Loll Dey.

1876. [1875] Stearine candles, manufactured by Messrs. Sainte & Co., Cossipore.

Division II.—Vegetable Oil Series.

1877. [47*] Almonds (*Amygdalus communis*).

1878. [49*] Almond oil (*do.*)

The almond is a native of the Himalayas, and is abundant in Cashmere. The oil is colourless or very slightly yellow, and is congealed with difficulty. It is obtained for native use in India, but does not as yet form a recognized article of export. Both varieties of almond, bitter and sweet, are imported into the northern parts of India from Ghoorbund, and into the southern parts from the Persian Gulf.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF OILS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1852–53 TO 1860–61.

Years	Whence Exported		Countries whither exported: United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Aden		Coast of Africa		Straits-Settlements		Mauritius and Bourbon		Other Parts		Total Exported to all Parts	
			Quantity	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Val.	Quan.	Value	Quan.	Value	Quan.	Val.	Quan.	Val.	Quan.	Value	Quan.	Value	Quantity	Value
			cwt. and gallons	£	cwt. & gallons	£	cwt. & gallons	£	cwt. & gallons	£	cwt. & galls.	£	cwt. & gallons	£	cwt. & gallons	£	cwt. & galls.	£	cwt. & gallons	£	cwt. & gallons	£	cwt. & gallons	£	cwt and gallons	£
1852-53	Bengal	cwt.	25,809	26,277	572	615	440	419	3,842	3,749	..	..	..	..	..	..	..	..	..	..	3,249	2,890	1,414	1,364	35,326	35,314
	Madras	gallons	1,083,239	29,531	27,300	591	..	..	91,804	2,474	..	..	235	107	..	..	..	..	11,226	642	130,210	3,032	258,164	8,055	1,602,188	44,432
	Bombay	„	91,958	6,666	..	..	..	..	..	..	164	170	4,600	2,640	3,008	310	175	84	24	89	3,638	263	116	71	103,683	10,293
	All India	..	..	62,474	..	1,206	440	419	..	6,223	164	170	4,835	2,747	3,008	310	175	84	11,250	731	..	6,185	..	9,490	..	90,039
1853-54	Bengal	cwt.	9,266	9,364	218	401	296	283	1,781	1,713	10	15	2	2	11	10	..	..	100	152	5,854	4,468	1,823	1,616	19,361	18,024
	Madras	gallons	1,581,412	44,974	198,473	4,062	163,390	3,869	..	..	..	..	1,447	102	..	..	..	..	16,052	921	212,179	5,377	245,797	6,854	2,418,750	66,159
	Bombay	„	193,745	14,580	18,635	1,381	..	..	..	..	158	135	15,910	1,586	10,821	811	2,975	606	83	305	3,552	341	1,218	231	247,097	19,976
	All India	..	..	68,918	..	5,844	..	4,152	1,781	1,713	..	150	..	1,690	..	821	2,975	606	..	1,378	..	10,186	..	8,701	..	104,159
1854-55	Bengal	..	..	17,178	..	233	..	278	..	2,859	..	76	..	1	..	..	..	..	..	232	..	5,428	..	2,940	..	29,225
	Madras	gallons	1,789,814	46,095	11,551	248	57,142	1,229	..	..	..	..	2,216	136	..	..	..	..	4,549	255	164,132	3,695	327,195	8,588	2,356,599	60,246
	Bombay	„	528,647	33,342	22,800	1,303	9,733	645	..	..	16	45	17,588	3,995	7,273	651	6,300	529	178	312	3,359	218	3,582	565	599,476	41,487
	All India	„	..	96,615	..	1,784	..	2,152	..	2,859	..	121	19,804	4,132	7,273	651	6,300	529	..	799	..	9,341	..	12,093	..	130,958
1855-56	Bengal	cwt.	23,251	24,509	1,847	943	571	622	10,304	11,335	631	205	6	8	..	..	..	..	236	128	3,896	3,427	4,393	4,225	45,075	45,402
	Madras	gallons	1,073,790	33,424	138,812	3,375	311,609	6,705	..	..	..	..	444	61	..	..	..	..	10,984	700	189,312	4,246	287,045	4,397	2,011,996	52,908
	Bombay	„	540,470	41,691	41,222	2,944	20,382	1,332	..	..	..	..	29,047	5,136	7,705	644	1,197	358	262	665	49,253	3,280	2,242	180	691,780	56,230
	All India	..	..	99,624	..	7,262	..	8,659	10,304	11,335	631	205	..	5,205	7,705	644	1,197	358	..	1,493	..	10,953	..	8,802	..	154,540
1856-57	Bengal	..	..	30,454	..	1,208	..	1,625	..	14,086	..	242	..	4	..	..	..	..	..	90	..	2,191	..	2,826	..	52,726
	Madras	gallons	1,304,977	37,690	149,288	3,153	269,810	6,516	..	..	..	..	225	14	..	..	..	..	12,962	707	191,909	4,332	131,454	4,055	2,060,625	56,467
	Bombay	„	655,372	49,247	44,907	3,629	58,858	4,631	..	..	..	199	20,065	6,699	9,790	986	7,319	801	116	354	41,077	3,154	3,459	271	840,963	69,971
	All India	..	..	117,391	..	7,990	..	12,772	..	14,086	..	441	20,290	6,717	9,790	986	7,319	801	..	1,151	..	9,677	..	7,152	..	179,164
1857-58	Bengal	..	..	84,350	..	1,927	..	1,654	..	9,178	..	226	..	14	..	..	..	..	..	186	..	1,234	..	2,268	..	101,037
	Madras	..	..	56,354	..	3,094	..	5,715	..	..	..	..	..	136	..	106	..	..	..	424	..	3,358	..	4,755	..	75,942
	Bombay	..	..	60,146	..	4,703	..	2,548	..	995	..	84	..	8,963	..	1,689	..	2,813	..	791	..	5,343	..	217	..	88,292
	All India	..	..	200,850	..	9,724	..	9,917	..	10,173	..	310	..	9,113	..	1,795	..	2,813	..	1,401	..	11,935	..	7,240	..	265,271
1858-59	Bengal	gallons	837,171	26,297	7,707	560	16,263	1,170	184,823	13,427	9,476	885	1,608	90	..	..	..	..	6,127	245	74,239	4,267	50,794	3,390	1,188,208	50,331
	Madras	„	2,024,121	46,982	5,051	106	90,231	2,143	..	..	..	..	1,419	114	..	..	..	..	12,579	1,029	224,315	4,891	37,085	1,673	2,394,801	56,938
	Bombay	„	854,740	69,274	7,674	740	..	..	..	..	66	417	60,306	7,912	14,410	1,290	15,920	355	109	421	41,925	3,284	5,843	1,600	1,000,993	85,293
	All India	„	3,716,032	142,553	20,432	1,406	106,494	3,313	184,823	13,427	9,542	1,302	63,333	8,116	14,410	1,290	15,920	355	18,815	1,695	340,479	12,442	93,722	6,663	4,584,002	192,562
1859-60	Bengal	„	584,562	42,464	12,445	1,089	25,323	2,077	214,777	18,781	9,050	798	..	30	329	29	126	6	7,891	337	47,620	3,601	27,694	2,037	929,817	71,249
	Madras	„	1,586,172	42,082	70,070	1,484	49,669	1,039	..	..	..	..	4,082	232	448	25	..	..	7,098	524	358,888	7,912	75,039	2,286	2,151,466	55,584
	Bombay	„	339,824	28,132	..	..	..	..	..	..	560	707	132,971	13,103	20,471	2,736	31,737	3,006	246	565	60,533	4,807	2,339	177	588,681	53,233
	All India	„	2,510,558	112,678	82,515	2,573	74,992	3,116	214,777	18,781	9,610	1,505	137,053	13,365	21,248	2,790	31,863	3,012	15,235	1,426	467,041	16,320	105,072	4,500	3,669,964	180,066
1860-61	Bengal	„	41,016	27,508	17,840	1,720	10,966	1,058	130,962	12,704	24,093	2,499	20	6	22	2	..	..	3,096	325	31,630	3,053	14,469	2,695	274,114	51,570
	Madras	„	2,219,380	114,309	176,758	8,254	72,157	1,747	..	..	28	11	9,900	493	2,160	211	..	..	4,571	324	216,022	17,009	67,616	3,275	2,768,592	145,633
	Bombay	„	278,361	25,661	..	..	..	..	..	..	233	397	36,737	5,615	6,593	831	2,985	318	175	390	45,232	3,653	2,328	311	372,644	37,176
	All India	„	2,538,757	167,478	194,598	9,974	83,123	2,805	130,962	12,704	24,354	2,907	46,657	6,114	8,775	1,044	2,985	318	7,842	1,039	292,884	23,715	84,413	6,281	3,415,350	234,379

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF WAX AND WAX CANDLES EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED														TOTAL EXPORTED TO ALL PARTS		
		UNITED KINGDOM		FRANCE		OTHER PARTS OF EUROPE		AMERICA		CHINA		ARABIAN AND PERSIAN GULFS		OTHER PARTS *				
		Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1857–58	Bengal . .	144,368	5,958	51,744	2,202	5,040	214	..	..	336	17	112	2	21,504	982	223,104	100	9,375
	Madras . .	251,248	5,992	97,546	3,525	..	..	..	..	..	..	7,796	279	..	..	356,590	159	9,796
	Bombay . .	130,085	5,807	18,974	847	751	33	..	..	25	1	6,126	313	9,111	425	165,072	73	7,426
	ALL INDIA .	525,701	17,757	168,264	6,574	5,791	247	..	..	361	18	14,034	594	30,615	1,407	744,766	332	26,597
1858–59	Bengal . .	164,710	5,182	131,348	4,562	..	..	..	..	4,714	169	..	..	51,803	1,847	352,575	157	11,760
	Madras . .	133,002	6,074	18,161	851	2,148	75	..	..	..	..	683	43	1,877	173	156,871	70	7,218
	Bombay . .	157,552	6,939	79,178	3,534	..	..	..	..	2,270	113	1,686	84	37,154	1,689	277,840	124	12,359
	ALL INDIA .	455,264	18,195	228,687	8,947	2,148	75	..	..	6,984	282	2,369	127	90,834	3,711	787,286	351	31,337
1859–60	Bengal . .	105,915	4,632	45,584	1,994	588	26	..	..	34,496	1,509	..	..	112,821	5,126	299,404	134	13,287
	Madras . .	79,184	3,884	58,908	2,079	..	..	..	..	..	..	1,774	125	4,310	153	144,176	64	6,241
	Bombay . .	149,942	6,694	17,614	790	..	..	..	..	3,755	187	4,403	220	76,844	3,471	252,558	113	11,362
	ALL INDIA .	335,041	15,210	122,106	4,863	588	26	..	..	38,251	1,696	6,177	345	193,975	8,750	696,138	311	30,890
1860–61	Bengal . .	86,968	4,277	36,008	1,748	..	..	4,032	144	13,188	652	..	..	173,348	7,831	313,544	139	14,652
	Madras . .	30,285	1,515	9,916	560	2,715	95	..	..	3,585	125	1,234	78	15,154	599	62,899	29	2,972
	Bombay . .	111,101	5,042	1,127	50	..	..	..	..	703	35	4,926	245	93,093	4,516	210,950	94	9,888
	ALL INDIA .	228,354	10,834	47,051	2,358	2,715	95	4,032	144	17,476	812	6,160	323	281,595	12,946	587,393	262	27,512

* Consisting of principally Batavia, Java, Aden, Africa, Mauritius and Bourbon, and the Straits Settlements.

1879. [177*] Dessee Akroot seeds (*Aleurites triloba*). INDIA MUSEUM.

1880. [50*] Indian walnut oil (*Aleurites triloba*), Hyderabad.

1881. [7084] Belgaum walnut oil (*Aleurites triloba*), DR. R. RIDDELL.

This oil is also called Kekui or Kekune, and Lumbang. The fruit whence it is procured is very abundantly produced in India, and the facility with which it is separable from the nut is an important recommendation. This oil is said to have been successfully employed as a drying oil.

1882. [5037] Moringa seed (*Moringa pterygosperma*), Madras. R. BROWN, Esq.

1883. [72*] Ben oil (*M. pterygosperma*).

This oil is valuable, because it does not soon turn rancid; and it might be extensively procured, as the tree is common throughout India. But though the flowers, foliage, and fruit are eaten by the natives, and the rasped root employed as a substitute for horse-radish, the oil is seldom extracted, and does not form an article of export, except in very small quantities. It is occasionally employed by the natives as an unguent in gout and rheumatism.

1884. [7358] Bonduc nut oil (*Guilandina bonduc*), Lucknow.

1885. [4959] Bonduc oil, Madras. DR. SHORTT.

1886. [10118A] Bonduc nut oil, Calcutta. KANNY LOLL DEY.

This oil is medicinal only; it is considered useful in palsy and other diseases.

1887. [7172] Teorah seed (*Brassica erucastrum*), Lucknow.

1888. [5686] Teorah oil, (*do.*) Lahore.

The cost of the oil is from 3 to 10 seers per rupee. Used for burning.

It may be remarked that all oils in Oude are extracted by the native press called 'Kolhoo,' turned by means of bullocks, with the exception of the castor oil seed, the oil from which is extracted by boiling in water, and afterwards skimming.*

1889. [123*] Cabbage seed oil (*B. oleracca*), Madras.

This is a fluid oil resembling rape seed oil.

1890. [96*] Capala seed oil (*Rottlera tinctoria*), Calcutta.

The oil which is obtained plentifully from the kernels of this fruit after the removal of the celebrated *Kupli* or *Kamala* powder, promises to be of some importance medicinally as a cathartic oil, and deserves a more complete investigation.†

1891. [68*] Cardamom seed oil (*Elettaria cardamomum*), Madras.

Used medicinally.

1892. [10097] Hidglee Badam oil (*Anacardium occidentale*), Calcutta. Messrs. Doss & Dey.

1893. [10733] Cashew nuts (*Anacardium occidentale*), Mangalore. V. P. COELHO, Esq.

* Central Committee, *Lucknow.*
† Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

1894. [6486] Cashew nuts, Calcutta. KANNY LOLL DEY.

1895. [4022] Cashew nuts, Madras. Mr. R. BROWN.

1896. [6058] Cashew nuts, Bombay.*

1897. [10703] Cashew-nut oil (*do.*), Mangalore. V. P. COELHO, Esq.

1898. [5700] Cashew-nut oil, Cuttack.

1899. [42*] Cashew-nut oil, Madras.

This light yellow and sweet-tasted oil is affirmed to be equal, if not superior, as an edible oil, to that of the olive or almond. The kernels have lately been met with in English commerce under the name of Cassia seeds — an evident corruption of Cashew. The tree is common in the East and West Indies. In Bengal it is found chiefly near the sea. The nuts are largely employed as a table fruit.

1900. [10683] Cassia-seed oil, Mangalore. V. P. COELHO, Esq.

A semi-solid oil with an aromatic odour of cinnamon.

1901. [10731] Castor-oil seeds (*Ricinus communis*), South Canara. V. P. COELHO, Esq.

CASTOR-OIL FRUIT.†

1902. [4026] Castor-oil seeds, Madras. Mr. R. BROWN.

1903. [6059] Erindee (*R. communis*), Ahmedabad.

1904. [10093] Erindee, Calcutta. Messrs. Doss & DEY.

1905. [5678] Erindee, Lucknow.

1906. [5691] Erindee, Do.

1906A. [6953] Erindee, Shahabad. R. W. BINGHAM, Esq.

1906B. [7364] Erindee, Cuttack.

1907. [55*] Castor oil (*R. communis*), Calcutta.

1908. [6641] Castor oil, Chota Nagpore.

1909. [10681] Castor oil, Mangalore. V. P. COELHO, Esq.

The castor-oil plant is extensively cultivated all over India. The following notes accompanied the samples. The plant is cultivated at Lucknow as a mixed crop. It is sown in June by almost all the villagers, not extensively, but principally for their own use. Its cultivation can be extended all over Oude. This oil is extracted by bruising the seed and then boiling it in water; the oil is afterwards skimmed off. This is the only seed out of which the oil is extracted by boiling, as in this case it is found cheaper than the method used for other seeds, which is by pressure.

The cost of the seed is one rupee per maund, and the price of the oil is from 2 to 5 seers per rupee, according to the abundance of the crop in the season. The proportion of the oil yielded is about half the weight of the seeds boiled; it is only used for burning.*

In Cuttack, the plant is grown all over the province, a good deal in patches of newly cleared land in the jungles of the Tributary States and Sumbulpore. The oil is extracted in two ways. It is used for burning and culinary purposes, and medicinally also. The local market is now 11½ peculs of the seeds per rupee. Both the native methods of extracting oil are wasteful and tedious, and therefore expensive. European oil presses and a knowledge of some methods of clarifying the expressed oil, seem only to be required to render the oil seed crops of this extensive division of great value.†

1910. [10695] Jungle lamp oil (*Ricinus communis major*), Mangalore. V. P. COELHO, Esq.

1911. [3750] Lamp oil (*do.*), Salem. CHETUMBARA PILLAY.

This oil is pressed from the larger variety of castor oil seed, and is sometimes drawn cold, when a pale straw-coloured oil is obtained, resembling that from the small-seeded kind. It is generally extracted by heat, and forms the common 'lamp oil' of the bazaars.

1912. [7191] Chaulmoogra seed (*Hydnocarpus odorata*), Moulmein.

1913. [5680] Chaulmoogra seed oil (*do.*), Chittagong.

1914. [10094] Chaulmoogra seed oil, Calcutta. Messrs. Doss & DEY.

The tree which produces the seed from which this oil is expressed is a slender tree, with very delicate but tough branches. The leaves are lance-shaped and dark green; the fruit is produced at the ends of the branches. It is very like a wood-apple, but rough, about 3 inches in diameter, and is filled with the seeds, each about an inch long, of an irregular shape, and about 1½ inches in circumference in the thickest part of the kernel; is covered with a thin hard shell of an earthy colour. The seeds are obtainable in the north of Chittagong, but it cannot be stated how much could be procured in any one season. The oil is very successfully used by native physicians for the cure of bad sores. Dr. Beatson remarks, that 'there is no doubt that the oil expressed from the Chalmoogree seeds is a most valuable remedy in leprosy, and in obstinate ulcers of all kinds.' He has seen ulcers, both leprous and non-leprous, take on a healing action on the application of Chalmoogree, after resisting every kind of treatment. The oil obtained in the bazaar is coarse and unpleasant.

1915. [2856] Cheerongee seed (*Buchanania latifolia*), Raepore.

1916. [6061] Cheerongee seed, Bombay.

This oil is rarely extracted from the abundantly oleagi-

* The extensive series of raw products from Bombay. Poonah, and Ahmedabad was collected and forwarded under the superintendence of Dr. BIRDWOOD, secretary to the Bombay Central Committee.

† From MR. M. C. COOKE.

* Central Committee, *Lucknow.*

† Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

nous seeds which are eaten by the natives to make them fat. The oil is clear, sweet, and straw-coloured; the trees grow abundantly in Mysore and Cuddapah, &c.

1917. [1238] Chemmarum seeds (*Amoora rohituka*), Calcutta.

From the seeds, where the trees are plentiful, as in Travancore and Bengal, the natives extract an oil which is useful for many economic purposes.

1918. [9389] Circassian beans (*Adenanthera pavonina*), Madras. DR. SHORTT.

These hard red seeds are best known here by their employment for ornamental purposes; but it would appear that an oil has been obtained from them.

1919. [7180] Hoorhooryaseed (*Polonisia icosandra*), Calcutta.

The seeds of this plant, which are employed medicinally in India, and sold in the bazaars under the name of *chorie-ajooain*, yield an oil when subjected to very powerful pressure, which is of a light olive-green colour, and very limpid. It might prove of service in cases where a very limpid oil would be an acquisition.

1920. [1936] Cotton seed (*Gossypium herbaceum*), Umritsur.

1921. [7121] Cotton seed, Lucknow.

1922. [9391] Cotton seed oil.

Manufactured in India; it is pale and limpid.

1923. [4791] Cress seed (*Lepidium sativum*), Burmah. Messrs. HALLIDAY, FOX & Co.

From the seeds of this plant an oil has been extracted in India, as well as in this country, but samples have not been forwarded to this Exhibition.

1924. [6136] Turbooz seed (*Cucurbita citrullus*), Ahmedabad.

1925. [64*] Water-melon oil (*C. citrullus*), Madras.

The seeds of this cucurbitaceous plant are used as the source of a mild culinary oil in Western India.

1926. [7054] Cucumber-seed oil (*Cucumis sativus*).

The oil of cucumber seed is a mild edible oil, which is obtained by expression for native use only.

1927. [6147] Bheera seed (*Cucumis*, species of), Ahmedabad.

1928. [6144] Khurbooza (*C. melo*), Ahmedabad.

1929. [4025] Khurbooza (*C. melo*), Madras.

1930. [6564] Kurbooja seed (*C. melo*), Calcutta.

1931. [4020] Kankur (*C. utilissimus*), Madras.

The fruit is yellow, the size of an ostrich's egg. The seeds are ground into meal, and an oil expressed from them, which is very nourishing. It is much cultivated in the Guntoor Circars.

1932. [6563] Kuddoo beeah (*Lagenaria vulgaris*).

1933. [4914] Bottle gourd seed (*L. vulgaris*), Madras. DR. SHORTT.

1934. [6135] Doodee seeds (*Lagenaria vulgaris*), Ahmedabad.

The fruit is employed for bottles. The seeds yield a bland oil. The plant is common in the East and West Indies.

1935. [6140] Toorai seed (*Luffa acutangula*), Ahmedabad.

A medicinal oil is obtained from this seed, which has a reputation among the native practitioners.

1936. [9390] Custard-apple seeds (*Anona squamosa*).

1937. [1930] Exile oil (*Cerbera Thevetia*), C. B. WOOD, Esq.

1938. [4789] Fennel-flower seed (*Nigella sativa*), Burmah. Messrs. HALLIDAY, FOX & Co.

1939. [*] Nigella oil (*N. sativa*). INDIA MUSEUM.

A clear and colourless, but rather viscid oil is obtained from these seeds, which appears to be employed principally as a medicine. It is called *Jungle geerah oil* in Mysore.

1940. [67*] Garlic oil (*Allium sativum*).

This is only a medicinal oil. It is clear, colourless, limpid, and contains the full odour of the plant. It might be available in cookery for those who admire the flavour of garlic in their dishes, but this will evidently be the fullest extent of its application; hence it can scarcely be considered of any importance commercially.

1941. [7731] Wolley yallu seed (*Sesamum orientale*), Astagram, Mysore.

1942. [6682] Black til seed (*S. orientale*), Siam. G. ANGUS, Esq.

1943. [6670] White til seed, Siam. G. ANGUS, Esq.

1944. [6438] Gingellie (*S. orientale*), Chota Nagpore.

1945. [7117] Black til (*S. orientale*), Cuttack.

1946. [7122] White sesame, Nhan kyen (*S. orientale*), Moulmein.

1947. [7123] Black til, Nhan mai (*S. orientale*), Moulmein.

1948. [4794] Black til, Burmah. Messrs. HALLIDAY, FOX & Co.

NATIONAL ARCHIVES OF INDIA

1949. [4804] White til, Burmah. Messrs. HALLIDAY, FOX & Co.

1950. [10732] Gingelly, Mangalore. V. P. COELHO, Esq.

1951. [4023] Gingelly seed, Madras. DR. HUNTER.

1952. [10680] Gingelly or sesame oil (*Sesamum orientale*), South Canara. V. P. COELHO, Esq.

1953. [2252] Gingelly oil, Salem. CHEDUMBARA PILLAY.

1954. [5685] Dark til oil, Lucknow.

1955. [17*] Gingelly oil, Patna.

1956. [5701] Sesame oil, Cuttack.

1957. [5687] Sesame oil, Bengal.

1958. [10091] Teel oil, Calcutta. Messrs. DOSS & DEY.

1959. [19*] Teel oil, Tanjore.

Gingelly oil is largely employed by the natives of India. The seed, as well as the oil, is exported in large quantities.

The black-seeded variety (*Tillee*) affords a larger percentage of oil than the red-seeded kind. Sesamum seed has of late been exported largely to France, where it is said to be employed for mixing with olive oil.

Three varieties of sesame seed are cultivated in India —the white seeded (*Suffed-til*), the red or parti-coloured (*Kala-til*), and the black variety (*Tillee*): it is the latter which affords the greater proportion of the gingelly oil of commerce. At the commencement of 1861, white seed was worth in the London markets, 65*s.*; black and brown, 58*s.* and 60*s.* per quarter.

A second sort of sesame oil, sometimes called 'Rape,' is obtained from the red-seeded variety.

Black sesame is sown in March, and ripens in May. *Red* sesame is not sown till June.

1960. [40*] Moneela gram oil (*Dolichos uniflorus*).

A pale yellow or almost colourless, viscid, clear oil, in Tanjore is stated to be obtained from a variety of this pulse. The variety employed for oil has nearly white seeds.

1961. [6486] Ground nuts (*Arachis hypogæa*), Calcutta, KANNY LOLL DEY.

1962. [4942] Vayr Kadalay (*A. hypogæa*), Madras. DR. HUNTER.

1963. [6339] Minia Kachang oil (*A. hypogæa*), Java. G. ANGUS, Esq.

1964. [30*] Ground-nut oil (*Arachis hypogæa*), Madras.

1965. [7085] Ground-nut oil, Deccan. DR. R. RIDDELL.

The ground nut is extensively cultivated in various parts of India; the kernels yield about 44 per cent. of a clear pale yellow oil, which is largely used as food and as fuel for lamps. The value of ground-nut kernels in London is about 16*l.* 10*s.* per ton, and of the oil 42*l.* to 43*l.* per ton. For ordinary purposes it is quite equal to olive oil.

1966. [6065] Bhang ka beej (*Cannabis sativa*).

1967. [6131] Hemp seed, Bombay.

The hemp plant is largely cultivated in India, but the oil from its seed is not in general use.

1968. [1957] Madras Hemp seed (*Crotalaria juncea*), Jhansee.

1969. [7112] Hemp seed, Lucknow.

1970. [185*] Kanari fruits (*Canarium commune*).

Yield a mild oil which is mixed with food when fresh.

1971. [6066] Khaliziri seed (*Vernonia anthelmintica*), Poona.

1972. [7081] Khaliziri seed, Bombay.

1973. [10118] Khaliziri seed, Calcutta. KANNY LOLL DEY.

The oil from these seeds is semi-fluid. The plant which produces them is very common in India.

Large quantities of linseed are imported into Britain from India. The Table (p. 91), shows the amount and value of the linseed from India exported to all parts for the eleven years ending 1861, whilst the others indicate points of interest regarding the amount and price of that and other oil-seeds exported from Bombay.

TABLE* SHOWING RANGE OF PRICES IN BOMBAY OF THE UNDERMENTIONED OIL SEEDS TAKEN MONTHLY FOR FOUR YEARS.

Article	1857		1858		1859		1860	
	Range	Average	Range	Average	Range	Average	Range	Average
Linseed, per cwt. Rs	4/8 @ 6/2½	5/8	4/10 @ 5/12	5/3	4/10 @ 5/2	4/12	3/14 @ 5/1	4/9
Teel seed, per candy .	23/ @ 32/	26/13	23/8 @ 26/8	25/8	23/8 @ 25/	24/14	22/ @ 30/	26/12
Rape seed, per cwt. .	4/12 @ 6/	5/6	4/8 @ 6/	5/6	5/ @ 5/9	5/4	5/ @ 6/	5/8
Mustard	5/8 @ 5/12	5/9	4/12 @ 5/8	5/2	4/8 @ 4/12	4/11	4/8 @ 5/	4/
Ground nuts, per cdy.	18/ @ 25/	21/6	16/ @ 21/	18/10	15/ @ 18/	16/7	16/ @ 25/	21/
Niger seed	15/8 @ 21/	18/4	15/8 @ 20/	17/12	15/ @ 17/8	15/10	15/8 @ 21/	19/10

* Furnished to DR. BIRDWOOD by the HON. W. B. TRISTRAM.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE* OF LINSEED EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850-51 TO 1860-61 INCLUSIVE.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		North America		China		Arabian and Persian Gulf		Islands and Shores of the Indian Seas		All other Places		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850-51	Bengal	24,521,504	59,601	3,701,712	8,997	72,688	177	34,675,760	84,277	..	..	..	..	2,016	5	15,568	38	62,989,248	28,120	153,095
	Madras	89,264	226	..	..	..	..	..	..	..	..	..	..	..	..	448	1	89,712	40	227
	Bombay	5,611,424	17,051	..	..	..	..	..	..	..	..	..	..	..	..	..	..	5,611,424	2,505	17,051
	All India	30,222,192	76,878	3,701,712	8,997	72,688	177	34,675,760	84,277	..	..	..	..	2,016	5	16,016	39	68,690,384	30,665	170,373
1851-52	Bengal	70,467,488	171,275	1,452,528	6,330	2,262,064	5,498	42,039,648	102,181	..	..	..	..	..	..	31,808	77	116,253,536	51,899	285,361
	Madras	114,464	277	..	..	..	..	..	..	..	..	..	..	..	..	..	..	114,464	51	277
	Bombay	10,822,672	28,989	..	..	672	2	1,066,352	3,332	..	..	..	..	..	..	448	3	11,890,144	5,308	32,326
	All India	81,404,624	200,541	1,452,528	6,330	2,262,736	5,500	43,106,000	105,513	..	..	..	..	..	..	32,256	80	128,258,144	57,258	317,964
1852-53	Bengal	55,871,424	135,798	573,440	1,394	50,624	123	50,433,600	105,916	..	..	..	..	3,360	8	10,640	26	106,943,088	47,742	243,265
	Madras	116,032	306	..	..	..	..	..	..	..	..	..	..	..	..	1,008	3	117,040	52	309
	Bombay	12,802,608	34,293	560	1	..	..	..	..	..	..	..	..	..	..	33,712	90	12,836,880	5,731	34,384
	All India	68,790,064	170,397	574,000	1,395	50,624	123	50,433,600	105,916	..	..	..	..	3,360	8	45,360	119	119,897,008	53,525	277,958
1853-54	Bengal	36,017,968	87,544	1,510,320	3,671	224,560	546	47,370,400	114,892	448	1	..	..	..	..	81,872	199	85,205,568	38,038	206,853
	Madras	315,952	933	..	..	..	..	..	..	..	..	..	..	..	..	1,904	6	317,856	142	939
	Bombay	5,782,672	69,586	30,128	362	..	..	..	..	..	..	..	..	..	..	9,408	113	5,822,208	2,599	70,061
	All India	42,116,592	158,063	1,540,448	4,033	224,560	546	47,370,400	114,892	448	1	..	..	..	..	93,184	318	91,345,632	40,779	277,853
1854-55	Bengal	126,898,464	307,460	3,618,832	8,796	8,176	20	..	..	2,576	15	..	..	58,576	107	..	..	130,586,624	58,298	316,398
	Madras	192,864	591	..	..	..	..	..	..	..	..	..	..	..	..	..	..	192,864	86	591
	Bombay	5,972,176	71,380	31,472	377	64,512	1,050	..	..	..	..	..	..	..	..	..	..	6,068,160	2,709	72,807
	All India	133,063,504	379,431	3,650,304	9,173	72,688	1,070	..	..	2,576	15	..	..	58,576	107	..	..	136,847,648	61,093	389,796
1855-56	Bengal	124,002,144	301,430	3,630,144	8,823	..	..	87,189,872	211,921	..	..	..	..	72,352	176	235,312	572	215,129,824	96,040	522,922
	Madras	204,064	650	..	..	..	..	..	..	..	..	..	..	..	..	..	..	204,064	91	650
	Bombay	7,183,792	116,770	264,992	4,308	3,360	54	..	..	..	..	..	..	..	..	..	..	7,452,144	3,327	121,132
	All India	131,390,000	418,850	3,895,136	13,131	3,360	54	87,189,872	211,921	..	..	..	..	72,352	176	235,312	572	222,786,032	99,458	644,704
1856-57	Bengal	20,463,632	66,071	2,002,000	4,858	505,344	1,228	145,506,480	353,667	..	..	..	..	3,248	8	247,296	601	168,728,000	75,325	426,433
	Madras	717,472	2,003	13,664	38	7,280	13	..	..	..	..	..	..	..	..	7,280	21	745,696	333	2,075
	Bombay	7,654,640	124,034	434,336	7,039	127,680	2,070	..	..	..	..	..	..	..	..	..	..	8,216,656	3,668	133,143
	All India	28,835,744	192,108	2,450,000	11,935	640,304	3,311	145,506,480	353,667	..	..	..	..	3,248	8	254,576	622	177,690,352	79,326	561,651
1857-58	Bengal	74,057,088	187,925	2,296,672	5,582	136,528	332	89,848,752	218,382	..	..	..	..	229,712	558	22,512	55	166,591,264	74,371	412,834
	Madras	703,696	2,469	20,384	62	..	..	..	..	..	..	..	..	..	..	..	..	724,080	323	* 2,531
	Bombay	8,875,776	177,837	284,256	5,346	342,048	7,369	1,737,792	30,792	..	..	..	..	..	..	..	..	11,239,872	5,018	221,344
	All India	83,636,560	368,231	2,601,312	10,990	478,576	7,701	91,586,544	249,174	..	..	..	..	229,712	558	22,512	55	178,555,216	79,712	636,709
1858-59	Bengal	29,942,464	292,956	1,390,310	13,603	24,436	240	27,686,152	290,883	..	..	..	..	..	..	1,442,134	14,217	60,485,496	27,002	611,899
	Madras	92,168	1,544	78,884	1,256	..	..	..	..	..	..	..	..	..	..	..	..	171,052	76	2,800
	Bombay	27,345,190	435,566	231,404	3,686	51,578	820	1,727,002	42,210	..	..	..	..	..	..	..	..	29,355,174	13,105	482,282
	All India	57,379,822	730,066	1,700,598	18,545	76,014	1,060	29,413,154	333,093	..	..	..	..	..	..	1,442,134	14,217	90,011,722	40,183	1,096,981
1859-60	Bengal	41,842,508	409,386	278,800	2,728	245,672	2,403	23,396,896	228,915	..	..	..	..	..	..	..	..	65,763,876	29,358	643,432
	Madras	104,878	1,731	7,134	117	..	..	..	..	..	..	..	..	..	..	..	..	112,012	50	1,848
	Bombay	26,095,024	415,651	171,216	2,728	..	..	3,129,694	49,126	..	..	..	..	..	..	..	..	29,395,934	13,123	467,505
	All India	68,042,410	826,768	457,150	5,573	245,672	2,403	26,526,590	278,041	..	..	..	..	..	..	..	..	95,271,822	42,531	1,112,785
1860-61	Bengal	15,190,840	446,915	423,976	1,558	..	..	11,464,712	24,225	15,260	56	..	..	..	..	12,404	217,718	27,107,192	12,101	690,472
	Madras	44,930	741	..	..	..	..	..	..	..	..	..	..	..	..	..	..	44,930	20	741
	Bombay	27,870,652	457,608	453,952	7,321	241,736	3,908	5,958,776	95,727	..	..	..	..	..	..	86	2	34,525,198	15,414	564,566
	All India	43,106,422	905,264	877,928	8,879	241,736	3,908	17,423,488	119,952	15,260	56	..	..	..	..	12,490	217,720	61,677,320	27,535	1,255,779

* The Indian rupee is here converted at the exchange of two shillings.

NATIONAL ARCHIVES OF INDIA

TABLE* SHOWING THE PLACE OF CHIEF PRODUCTIONS IN WESTERN INDIA—THE QUALITY, PRICE AND QUANTITY OF THE PRINCIPAL OILS AND OIL SEEDS EXPORTED FROM BOMBAY.

Article	Place of Production	Quality		Nominal Prices in 1861	Export for year ending 30th April 1860
		In Bombay.	In London.		
Linseed	Sholapore and Khandeish	Best in the World		Rs. 5/4 @ 5/6 per cwt.	
Do.	Arvee, Hingunghaut, Oomrawutty	Good	Good	5/ @ 5/2	262,970 Qrs.
Do.	Scinde	Inferior	Good	4/14	
Teel seed	Khandeish	Best	Best	Rs. 40/ per candy of about 5 cwt.	40,963 do.
Do.	Scinde and Guzerat	Good	Good	38/ do. do.	
Rape seed	Guzerat	Best in the world		6/9 per cwt.	
Do.	Scinde, Ferozepore	Good	Good	6/ do.	73,270 do.
Do.	Cutch	Do.	Do.	5/10 @ 6/	
Mustard seed	Guzerat	Best	Good to best	25 @ 26 per candy of $5\frac{1}{2}$ cwt.	
Do.	Ghattee	Good	Poor to good	22 @ 23/ do.	1,039 do.
Do.	Scinde	Do.	Do.	do. do.	
Poppy seed	Guzerat and Malwa	Only description		6/	219 do.
Niger seed	Nassick and Sholapore	Do.		25 @ 26 per candy of $5\frac{1}{4}$ cwt.	458 do.
Ground nuts	Vingorla, Mhar, Barsee, Nassick	Good	Good	26 @ 27 per do. of 5 cwt.	4,057 do.
Castor oil	Bulsar and Neighbourhood	Do.	Poor	4/8 @ 5/ per maund of 28 lbs.	11,063 Gals.
Teel oil	Bombay	Do.	Good	5/ per maund of do.	407,089 do.
Do.	Ghatee	Inferior	Inferior	4/ @ 4/4	
Safflower	Barsee	Best	Inferior	9/ @ 10/ per do. of lbs. 4106	237 cwt.
Do.	Rajapore and Compta.	Good	Do.	7/ @ 8/ do. do.	
Kokum	Goa	Best	Do.	40 @ 45/ per candy of 7 cwt.	None.
Do.	Mhar, Vingorla, Compta	Poor	Do.	20 @ 22/ per do.	

* Furnished to DR. BIRDWOOD by the HON. W. B. TRISTRAM.

1974. [10172] Linseed (*Linum usitatissimum*), Lahore.

1975. [10173] Linseed, Jhansee.

1976. [4028] Linseed, Madras.

1977. [7119] Linseed, Cuttack.

1978. [7169] Linseed, Lucknow.

1979. [7168] Linseed, Midnapore.

1980-1. [6486, 7175] Linseed, Calcutta. KANNY LOLL DEY.

1982. [6062] Linseed, Ahmedabad.

1983. [5692] Linseed oil (*L. usitatissimum*), Lucknow.

1984. [5684] Linseed oil, Cuttack.

1985. [10095] Teese oil (boiled), Calcutta. Messrs. Doss & DEY.

1986. [10089] Teese oil, Do.

1987. [151*] Linseed oil, Madras.

1988. [6312] Macassar oil, Macassar. G. ANGUS, Esq.

The oil is solid at ordinary temperatures.

1989. [6063] Malkungunnee seed (*Celastrus paniculatus*), Bombay.

1990. [100*] Malkungee oil (*do*).

1991. [99*] Valuluvy oil (*do.*), Madras.

The oil yielded by the seeds of this species of *Celastrus* by expression is of a deep scarlet colour; it is only employed medicinally.

1992. [6486] Marking nuts (*Semecarpus anacardium*), Calcutta. Messrs. Doss & DEY.

The acrid and vesicating oil which is contained between the laminæ of the pericarp is employed as a preventive against the attack of the white ant, and also by native practitioners as a remedy in rheumatic and leprous affections. The oil which is obtained from the kernel of the nut is of a different character; but it has only been obtained experimentally, and it would seem to resemble the mild oil of *Cashew-nut* kernels.

1993. [7176] Bakul seeds (*Mimusops elengi*), Calcutta.

1994. [6244] Rana seeds (*M. kaki*), Ahmedabad.

Although the oil of the Bakul is obtainable in considerable quantities, it is not much used. It has some medicinal reputation.

NATIONAL ARCHIVES OF INDIA

1995. [9392] Pulas seed (*Butea frondosa*).

1996. [65*] Moodooga oil (*B. frondosa*).

Only obtainable in small quantities. Merely employed medicinally.

1997 [7725] Sasvey seed (*Sinapis dichotoma*), Astagram, Mysore.

1998. [7118] Sasvey seed, Cuttack.

1999. [6452] *S. ramosa*, Chota Nagpore.

2000. [7170] Sarson (*S. juncea*), Lucknow.

2001. [7178] Raee (*S. ramosa*), Midnapore. R. V. COCKERELL, Esq.

2002. [7183] Raee, Beerbhoom.

2003. [7174] Raee, Hooghly.

2004–5. [6236, 6232] Raee, Ahmedabad.

2006. [6233] Raee, Bombay.

2007. [6235] Raee, Poona.

2008. [10696] Mustard-seed oil, Mangalore. V. P. COELHO, Esq.

2009. [5681] *S. dichotoma*, Cuttack.

2010. [5689] *S. ramosa*, Lucknow.

2011. [5712] *S. juncea*, Do.

2012. [5696] *S. ramosa*, Hooghly.

2013. [6443] *S. dichotoma*, Chota Nagpore.

Five or six species of *Sinapis* are cultivated throughout India for the sake of their oil, which is much esteemed in the country for cookery, for medicine, and for anointing the person.

2014. [6041] Myrabolans (*Terminalia chebula*).

The kernels of the fruit yield in small quantities an oil which is occasionally extracted in India for medicinal purposes.

2015. [1854] Beleric Myrabolans (*T. belerica*), Punjab.

2016. [97*] Myrabolan oil (*T. belerica*), Madras.

The fruit is astringent, but the kernels are eaten. They yield a small quantity of oil, which appears to be of medicinal use in India.

2017. [46*] Indian almond oil (*T. Catappa*), Calcutta.

2018. [6439] Badam oil (*T. Catappa*), Chota Nagpore.

The kernel of the fruit resembles an almond or filbert in taste and composition; hence it has been called the *wild almond* and *country almond*. It yields an excellent fixed oil, which is rather thicker and more amber-coloured than almond oil, for which it might be substituted.

2019. [9393] Nahor seeds (*Mesua ferrea*), Bengal.

2020. [6209] Nageshur (*M. ferrea*), Chittagong.

2021. [10738] Nago sampige (*M. ferrea*), Mangalore. V. P. COELHO, Esq.

2022. [1932] Nahor oil (*M. ferrea*). C. B. WOOD, Esq.

2023. [5709] Nagkesur oil (*M. ferrea*), Chittagong.

This promises to be a valuable oil, if it can be obtained in sufficient quantities.

The tree from which seeds are obtained grows wild in the jungles in the hills of this district, and has been planted many years ago on the sides of the road leading to some of the dwelling houses in the station. The seeds are contained in a strong brown skin, one, two, or three in each. When ripe the skin bursts and the seeds drop out. The seed is covered with a thin hard shell. The oil is an excellent cure for cutaneous diseases.*

2024. [88] Physic nuts (*Jatropha curcas*), Mangulpore.

2025. [6203] Arenda seeds, (*J. curcas*), Chittagong.

2026. [86*] Physic nut oil (*J. curcas*), Madras.

2027. [5704] Arenda oil (*J. curcas*), Chittagong.

The oil is employed not only medicinally, but also for lamps. It is, however, very local, both in its manufacture and use.

The bush from which the seed is obtained is used for fencing ground; it is readily increased by cuttings, which rapidly take root. The seeds are three or four, contained in a thin skin, which is black; the seed is of the same colour, and grows in branches; the stems of the bushes are not strong, but they answer excellently for fences, with split bamboo tied on each side to keep them straight and together, and the great advantage is that no kind of cattle eat them. The seeds are collected and the oil expressed in the usual way.†

2028. [144*] Bherinda oil (*Jatropha*, a species of), Bheerbhoom.

2029. [7120] Polang seed (*Calophyllum inophyllum*).

---

* Local Committee, *Chittagong.*
† Local Committee, *Chittagong.*

NATIONAL ARCHIVES OF INDIA

2030. [4029] Polang seed, Madras. MR. R. BROWN.

2031. [93*] Pinnaycottay oil (*C. inophyllum*), Madras.

2032. [5682] Polang oil (*C. inophyllum*), Cuttack.

Is manufactured and used at Bombay, Tinnevelly, and other parts of India, as a lamp-oil. The seeds from which it is obtained are very oleaginous, and yield about 60 per cent. of their weight of oil.

2033. [10736] Hone seeds (*C. calaba*), Mangalore. V. P. COELHO, Esq.

2034. [4021] Poonga seed (*Pongamia glabra*), Madras. MR. R. BROWN.

2035. [6055] Kurrunj seed (*P. glabra*, Ahmedabad.

2036. [6202] Caron seed (*P. glabra*), Chittagong.

2037. [82*] Kurrunjate oil (*P. glabra*), Sattara.

2038. [6444] Kurrunj oil (*P. glabra*), Chota Nagpore.

2039. [5694] Caron oil (*P. glabra*), Chittagong.

This oil is of a pale brownish colour, and is fluid at a temperature above 55°. It has a slight smell, which becomes more evident in the darker-coloured samples than in the pale sherry-coloured. The tree from which it is obtained is a crooked tree, grows in wet places near fresh water, very common on the sides of ditches which surround native dwellings. The seed is bean-shaped, and produced in a flat pod: the pods grow several together. The flower is pink and white, of the shape of a bean-flower or blossom. The oil is used for burning in native lamps, and in large quantities for boiling with dammer to soften it for the seams and bottoms of ships. It is also often used by native practitioners for the cure of itch. A maund of seeds costs 1R. 8A., and the extraction of the oil by heat costs 8 annas: the oil produced amounts to 6¾ seers per maund.*

2039A. [2129] Kunjee oil. Jubbulpore.

'This oil is extracted from seeds obtained from the pods of a bean. The tree grows to a considerable height, and is found in the jungles about, and in the station of Jubbulpore. It is used by the natives for skin diseases. Dr. Wilson says respecting it, "Kungee oil is extracted from the seeds of a leguminous plant, cultivated in gardens: it is used externally in the treatment of itch, but is far inferior in its effects to sulphur. Internally it is said to be poisonous in large doses."'—J. B. WILLIAMS, Esq.

2040. [10156] Poppy seed (*Papaver somniferum*).

2041. [4024] Poppy seed, Madras, MR. R. BROWN.

2042. [5697] Poppy seed oil (*do.*), Bengal.

2043. [10101] Posto oil (*P. somniferum*), Calcutta. Messrs. DOSS & DEY.

2044. [11*] Poppy seed oil (*P. somniferum*), Vizianagram.

2045. [6955] Poppy seed oil. Lucknow.

The seeds would yield by expression about 50 per cent. of a bland and very valuable oil, of a pale golden colour, fluid to within 10° of the freezing point of water. It dries easily, is inodorous, of agreeable flavour, and partially soluble in alcohol. The seed is worth about 61s. in the English market. By simple exposure to the rays of the sun in shallow vessels, the oil is rendered perfectly colourless. It is expressed by means of a heavy circular stone, placed on its edge, made to revolve by a long lever, and the apparatus is worked by draught bullocks.

MR. BINGHAM adds the following note on this oil-seed:—'The seed has no narcotic qualities, but has a sweet taste, and is used, parched, by the lower class of natives as a food; it is also much used by the sweetmeat-makers as an addition in their wares. This and the seed of the Teel (*Sesamum orientale*) are the only oilseeds, with the exception of the cocoanut, which are used for that purpose. It produces, under the native method, a clear, limpid oil, which burns very quickly. About 30 per cent. of oil is generally extracted, and the cake is then sold as a food to the poorer classes. The oil at present sells at about 5 seers per rupee at Shahabad. The production of this seed is only limited by the production of the poppy.

'In Oude each ryot sows from 2 to 4 beegahs in the month of October. The oil is extracted by the common native press. The cost of the seed is 10 seers for the rupee, and the oil sells for 3 seers for the rupee: two-fifths of the weight of the seed employed is about the proportion of oil yielded by the native process. The poppy seed is eaten by the natives made into sweetmeats, provided the opium has been extracted from the seed vessel, otherwise it is bitter and narcotic, and under these circumstances the oil extracted is also bitter. Used for cooking and burning.'*

2046. [9394] Prickly poppy seed (*Argemone mexicana*), Chingleput. DR. SHORTT.

2047. [1933] She-al-kanta oil (*A. mexicana*), Malda. DR. R. F. THOMPSON.

The plant from which the oil is obtained is a very common, troublesome weed growing almost everywhere, on any abandoned heap of rubbish. The plant itself is well known, having prickly thistle-like leaves, and bright yellow flowers. The seed yields a large quantity of oil, nearly as much as the common mustard seed. The oil is pale yellow-coloured and clear. It is mild, resembling that of the poppy, and may be taken in one-ounce doses without producing purgative effects. It is readily procurable, and so cheap that a considerable saving has been effected from its introduction by Dr. Thompson into the Malda jail for burning in place of mustard oil.

2048. [5699] She-al-kanta oil, Chittagong.

2049. [6060] Moora seed (*Raphanus sativus*), Bombay.

2050. [6150] Moola seed (*do.*), Ahmedabad.

2051. [6076] Ramtil seed (*Guizotia oleifera*), Poona.

* Local Committee, *Chittagong.*

* Central Committee, *Lucknow.*

NATIONAL ARCHIVES OF INDIA

2052. [7171] Sooregoja (*G. oleifera*), Midnapore.

2053. [6442] Soorgooja oil (*G. oleifera*), Chota Nagpore.

This is a sweet-tasting edible oil, plentiful in some parts of the country, and is employed similarly to sesame or gingelly oil, but is not generally considered so good. The seeds yield about 34 per cent. of oil. In some parts of India its value is said to be about 1*d.* per gallon. It is exported under the name of *Niger* seed. Its price in the Bombay market will be seen on reference to the Table (p. 90). It was first shipped to London experimentally in 1851. It is grown in very large quantities in Chota Nagpore, being a favourite crop, of easy cultivation, and giving good returns.

2054. [6234] Rape seed (*Brassica napa*), Ahmedabad.

Although we do not receive the oil, large quantities of seed are imported under the name of rape-seed from India, probably some of it the produce of species of *Sinapis*.

2055. [121*] Vappauley seeds (*Wrightia antidysenterica*).

The seeds of this tree are in great repute in India for their medicinal virtues, which the oil is supposed also to possess. It is employed only medicinally, and is obtained in but small quantities.

2056. [1788] Koosum or koosumba seed (*Carthamus tinctorius*), Punjab.

2057. [6070] Hurdee seed (*C. tinctorius*), Ahmedabad.

2058. [1931] Safflower oil (*C. tinctorius*), Calcutta. C. B. WOOD, Esq.

2059. [5688] Safflower-oil, Lucknow.

2060. [7053] Safflower-oil, (refined), Do.

This is a light yellow clear oil, when properly refined or prepared; it is used in India for culinary and other purposes. This oil deserves more attention than it has hitherto received in this country; and if once fairly introduced, there is no doubt whatever of its becoming a staple import. It is used in some of the Government workshops as a 'drying oil.' It is believed to constitute the bulk of the celebrated 'Macassar oil.' The seed is exported under the name of Curdee or safflower seed. The LUCKNOW COMMITTEE appends the following note: — In Oude it is sown in October, either alone, or along the edge of wheat crops; both light and heavy soils are adapted to it. It is cultivated in every village, but not extensively. There would be no difficulty in farther cultivating it to any extent. The oil is extracted by pressing. The cost of the seed, which is called 'Barré,' is 18¾ seers per rupee, and the cost of the oil is from 3 to 4 seers per rupee.

2061. [7113] Retha, soap berry (*Sapindus emarginatus*), Cuttack.

2062. [6064] Reetah (*do.*), Ahmedabad.

2063. [76*] Soap-nut oil (*S. emarginatus*), Madras.

This is a pale yellow semi-solid oil, valued in medicine by the natives, but too costly to be otherwise employed.

2064. [77*] Tobacco oil (*Nicotiana tabacum*).

An oil extracted from tobacco-seed of a very dark colour, thick, and with an oppressive odour.

2065. [*] Babool seed (*Acacia arabica*).

The pods of this tree, known as the *Babool* in many parts of India, have long been employed in tanning on account of their astringency, but the extraction of oil from the seeds is only of recent date. It must be classed among experimental oils.

2066. [8*] Bassia butter in cakes (*Bassia butyracea*).

This is a beautiful, white, solid fat, the produce of the fruit of *Bassia butyracea*. It melts at a temperature above 120° Fahr. and in this respect it is superior to all other vegetable fats produced in India. The oil concretes immediately it is expressed.

2067. [4961] Mowha seeds (*Bassia latifolia*), Madras. DR. SHORTT.

2068. [6139] Mowha seeds, Ahmedabad.

2069. [6457] Mowha seeds, Allahabad.

2070. [6458] Mowha seeds, Allahabad.

2071. [5683] Mowha oil (*do.*), Cuttack.

2072. [6440] Mowha oil, Chota Nagpore.

2073. [7*] Mowha oil, Chota Nagpore.

2074. [5690] Mowha oil, Lucknow.

2075. [10100] Mowha oil, Calcutta. Messrs. DOSS & DEY.

2076. [7082] Mowha oil, Madras.

This fatty substance, obtained also from the kernels of the fruit, is an article of common consumption in India, and may often be met with under the names of Mowha or Yallah oil in the London market. The tree grows wild in the Taree, and is also planted in groves in most parts of Oude, near villages, &c. Its cultivation can be extended almost indefinitely, and it thrives without any trouble. Its flowers have a thickened and enlarged tube, in which is contained a considerable amount of sugar. They are dried and eaten by the natives, and also fermented for the manufacture of *Mowhah Spirits*. The cost of the oil extracted is 3 rupees per maund. The proportion of oil yielded by native process is about half the weight of the seed; used only for burning.*

2077. [9*] Illoopa oil (*B. longifolia*), Madras.

---

* Central Committee, *Lucknow*.

NATIONAL ARCHIVES OF INDIA

2078. [2251] Illoopa, Chedumbara Pillay.

This solid fat is obtained from the kernels of the fruit, and is generally of a dirty white colour, and not so firm as the Bassia butter of *B. butyracea*. It melts at a temperature above 76°. The tree is common everywhere in Southern India, and the fat or oil is employed largely by the natives.

2079. [5036] Cocoa nut (*Cocos nucifera*).

2080. [6326] Cold drawn cocoa-nut oil (*do.*), Singapore. JOSE D'ALMEIDA, Esq.

2080A [2951] Cocoa-nut oil, Calcutta. A. GEORGE, Esq.

2081. [4197] Cocoa-nut oil, Ayer Rajah, Penang. G. SCOTT, Esq.

2082. [9370] Cocoa-nut oil, South Canara. V. P. COELHO, Esq.

2083. [5703] Cocoa-nut oil, Cuttack.

2084. [2951] Cocoa-nut oil, Cossipore.

2085. [6001] Kokum butter (*Garcinia purpurea*), Bombay.

This solid vegetable oil melts at a temperature of 95°. It now forms an article of export. The seeds are first sun-dried, and then pounded and boiled in water; the oil collects on the surface, and on cooling concretes into a solid cake. When purified from extraneous matter, the product is of a rather brittle quality, of a pale yellowish hue, inclining to greenish, and mild to the taste. The seeds yield about one-tenth of their weight of oil. It is admirably adapted for the manufacture of healing ointments.

2086. [10740] Gamboge fruits (*Garcinia pictoria*), Mangalore. V. P. COELHO, Esq.

2087. [10693] Gamboge butter (*do.*), Do. Do.

This solid fat is obtained from the fruit of the gamboge tree of India. It is obtained by pounding the seeds in a stone mortar, and boiling the mass until the fat rises to the surface. It is used as a substitute for ghee (purified butter) by the poor.

2088. [10684] Mangosteen oil (*Garcinia mangostana*), Mangalore. V. P. COELHO, Esq.

A hard solid fat, resembling the vegetable tallow of Borneo.

2089. [4954] Coodiri seed (*Sterculia fœtida*), Madras. DR. SHORTT.

2090. [141*] Kikuel oil (*Salvadora Persica*).

This oil has a somewhat aromatic odour, is of a bright green colour, and solid at a temperature below 95°. It most resembles in appearance the vegetable tallow of Borneo.

2091. [7001] Neem seed (*Azadirachta indica*), Bombay.

2092. [4951] Neem seed, Chingleput. DR. SHORTT.

2093. [3749] Veppa ennye oil (*Azadirachta indica*), Salem. CHEDUMBARA PILLAY.

2094. [130*] Margosa oil (*A. indica*), Madras.

This is a pale yellow semi-solid oil, obtained from the fruits of a tree common in India. It is much employed by native practitioners, administered both internally and externally, and is sold in the bazaars, for illuminating purposes, under the name of *bitter oil*.

2095. [7055] Neem oil (*A. indica*).

2096. [115*] Marotty seeds (*Hydnocarpus inebrians*).

2097. [10734] Surrate fruits (*H. inebrians*), Mangalore. V. P. COELHO, Esq.

2098. [10682] Surrate oil (*do.*), Do. Do.

2099. [*] Neeradimootoo oil (*H. inebrians*).

The oil is used as a sedative, and as a remedy in scabies and ulcers of the feet.

2100. [4202] Nutmeg butter (*Myristica moschata*), Penang. G. SCOTT, Esq.

This fat is generally prepared by beating up the nutmegs, enclosing the paste in a bag and exposing it to the vapour of water, and afterwards expressing the fat by means of heated plates.

2101. [10744] Pundi kai fruits (*M. malabarica*). Mangalore. V. P. COELHO, Esq.

2102. [11*] Piney tallow (*Vateria indica*), Canara.

2103. [191] Piney tallow, Mangalore. V. P. COELHO, Esq.

This butter is of solid consistence, and requires a higher temperature to melt it than animal tallows.

2104. [6675] Vegetable tallow, Siam. G. ANGUS, Esq.

2105. [6676] Vegetable tallow, Cochin China. G. ANGUS, Esq.

2106. [6679] Vegetable tallow, Borneo. G. ANGUS, Esq.

The Borneo tallow is obtained from the seeds of a Dipterocarpous tree, and is generally run whilst melted into joints of bamboo. It has a pale greenish tint, is very hard, and approximates nearly to a vegetable wax. The other two vegetable tallows now exhibited appear to be new, and they are unaccompanied with any information.

2107. [1876] Vegetable wax. H. E. LOWER, Esq.

This is an artificial product manufactured by the exhibitor from castor oil.

NATIONAL ARCHIVES OF INDIA

SECTION B.—ANIMAL SUBSTANCES USED IN MANUFACTURES.

I.—FOR TEXTILE FABRICS AND CLOTHING.

1. WOOL.

As will be gathered from the Table (p. 98), wool has very rapidly become an important article of export from India.

The following information respecting the various woods used in the Punjab, of which specimens have been forwarded, is supplied by the LAHORE COMMITTEE:—

The following woollen substances are used in the Punjab:—

a. Pashum, or shawl wool, properly so called, being a downy substance, found next the skin and below the thick hair of the Thibetan goat. It is of three colours: white, drab, and dark lavender (Tûsha).

The best kind is produced in the semi-Chinese Provinces of Turfan Kichar, and exported *viâ* Yarkand to Kashmere. All the finest shawls are made of this wool, but as the Maharajah of Kashmere keeps a strict monopoly of the article, the Punjab shawl-weavers cannot procure it, and have to be content with an inferior kind of Pashum produced at Châthân, and exported *viâ* Leh to Umritsur, Nûrpûr, Loodianah, Jelalpûr, and other shawl-weaving towns of the Punjab. The price of white Pashum in Kashmere is for uncleaned, 3*s.* to 4*s.* per lb.; ditto cleaned, 6*s.* to 7*s.* per lb. Of Tûsha ditto, uncleaned, 2*s.* to 3*s.* per lb.; cleaned, from 5*s.* to 7*s.*

b. The fleece of the Dumba sheep of Kabul and Peshawur.—This is sometimes called *Kabuli Pashum*. It is used in the manufacture of the finer sorts of chogas, an outer robe or cloak with sleeves, worn by Affghans and other Mahomedans of the Western frontier. Specimens of these are included in the collection.

c. Wahab Shâhi, or *Kirmani Wool.*—The wool of a sheep found in Kirman, a tract of country in the south of Persia, by the Persian Gulph. It is used for the manufacture of a spurious kind of shawl cloth, and for adulterating the texture of Kashmere shawls. Specimens of this wool will be found in the collection.

d. The hair of a goat common in Kabul and Peshawur, called *Pat*, from which a texture called *Pattu* is made.

e. The woolly hair of the camel.—From this a coarser kind of choga is made.

f. The wool of the country sheep of the Plains.—Regarding the production of wool in the Himalayan or Sub-Himalayan portion of the Punjab, the last year's Revenue Report states that 'there can be no doubt that the valleys of the Sutlej, Ravee, Chandrabaga (or Chenab), Namisukh, and other tributaries of the Indus, supply grazing grounds not to be surpassed in richness and suitableness in any part of the world. The population inhabiting them are chiefly pastoral, but owing to sloth and ignorance the wool they produce is but small in quantity, full of dirt and ill-cared for in every way.' The government of the Punjab have made efforts to improve the breed by the importation of Merino rams, but hitherto with little success. However, a truss of Merino wool produced at Huzara, a hill district to the north-west of the Punjab, and sent to England in 1860, was there valued at 1*s.* 6*d.* per lb.

The following samples 2108–2122 are from Umritsur.

2108. [3504] Wool, Kashmere goat's.

2109. [3508] Wool, weft (Wahab Shahi).

2110. [3509] Wool cleaned (Wahab Shahi).

2111. [3510] Wool, Kashmere goat's.

2112. [3511] Wool, Do., new.

2113. [3512] Wool, raw.

2114. [3513] Wool, first class, white Cabul goat's, cleaned.

2115. [3514] Wool, original colour.

2116. [3515] Wool, first class, brown Cabul goat's, cleaned.

2117. [3516] Wool, third class, black and raw.

2118. [3517] Wool, first class, white.

2119. [3518] Wool, second class, original colour.

2120. [3519] Wool, second class, red.

2121–2. [3520–1] Wool, fourth class, black.

The four next samples 2123–2126 are from Lahore.

2123. [5612] Wool, raw Pashum of the Thibetan goat, used in the manufacture of Kashmere shawls of the kind called Tusha, produced in Thibet.

2124. [5613] Wool, raw white.

2125. [5614] Wool, cleaned, of the kind called Tusha.

2126. [5656] Wool of the Dumba sheep.

2127. [3505] Wool, first class, for weft. Kashmere.

2128. [3506] Wool, second class, do., Do.

2129. [3507] Wool, third class, do., Do.

2129A. [5649] Wool, Thibet.

2130. [5650] Wool, Do.

The undermentioned yarns and threads are from Lahore.

2131. [5651] Untwisted yarn.

2132. [5652] Pashum thread.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE* OF WOOL EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61 INCLUSIVE.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		North America		China		Arabian and Persian Gulfs		Islands and Shores of the Indian Seas		All other Places		Total Exported to all Places		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850-51	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	164	50	..	..	164	..	50
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	4,492,794	65,525	..	..	..	..	189,114	2,758	..	..	..	..	..	..	2	2	4,681,910	2,090	68,285
	All India	4,492,794	65,525	..	..	..	..	189,114	2,758	..	..	..	..	164	50	2	2	4,682,074	2,090	68,335
1851-52	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	30,985	236	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30,985	14	236
	Bombay	7,025,728	100,370	..	..	..	..	448	6	..	..	..	..	..	..	..	..	7,026,176	3,137	100,376
	All India	7,056,713	100,606	..	..	..	..	448	6	..	..	..	..	..	..	..	..	7,057,161	3,151	100,612
1852-53	Bengal	† 17,600	285	..	..	..	..	† 8,000	123	..	..	..	..	† 7,800	114	† 26,400	407	† 59,800	27	929
	Madras	79,072	856	..	..	..	..	..	..	..	..	..	..	..	..	..	..	79,072	35	856
	Bombay	11,921,927	170,313	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11,921,927	5,322	170,313
	All India	12,018,599	171,454	..	..	..	..	8,000	123	..	..	..	..	7,800	114	26,400	407	12,060,799	5,384	172,098
1853-54	Bengal	54,096	875	..	..	..	..	..	..	..	..	..	..	..	..	..	..	54,096	24	875
	Madras	128,088	1,578	..	..	..	..	..	..	..	..	..	..	..	..	..	..	128,088	57	1,578
	Bombay	14,165,069	202,359	28,281	304	..	..	..	..	..	..	..	..	..	..	33,945	485	14,227,295	6,351	203,148
	All India	14,347,253	204,812	28,281	304	..	..	..	..	..	..	..	..	..	..	33,945	485	14,409,479	6,432	205,601
1854-55	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,576	35	2,576	1	35
	Madras	120,762	1,682	..	..	..	..	..	..	..	..	..	..	..	..	..	..	120,762	54	1,682
	Bombay	12,964,065	205,136	13,272	190	..	..	13,052	221	..	..	..	..	..	..	..	..	12,990,389	5,799	205,547
	All India	13,084,827	206,818	13,272	190	..	..	13,052	221	..	..	..	..	..	..	2,576	35	13,113,727	5,854	207,264
1855-56	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	† 70,000	840	..	..	..	..	..	..	..	..	..	..	..	..	..	..	† 70,000	31	840
	Bombay	15,953,942	270,647	85,786	1,455	..	..	..	..	..	..	..	..	..	..	..	..	16,039,728	7,161	272,102
	All India	16,023,942	271,487	85,786	1,455	..	..	..	..	..	..	..	..	..	..	..	..	16,109,728	7,192	272,942
1856-57	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	11,566	121	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11,566	5	121
	Bombay	18,084,762	306,795	273,557	5,352	114,781	1,947	..	..	..	..	..	..	..	..	..	..	18,473,100	8,247	314,094
	All India	18,096,328	306,916	273,557	5,352	114,781	1,947	..	..	..	..	..	..	..	..	..	..	18,484,666	8,252	314,215
1857-58	Bengal	26,962	393	..	..	2,576	38	9,632	150	..	..	..	..	..	..	..	..	39,170	17	581
	Madras	66,663	962	..	..	..	..	..	..	..	..	..	..	..	..	..	..	66,663	30	962
	Bombay	16,892,920	351,783	662,607	13,252	21,840	370	952,196	20,155	..	..	..	..	..	..	..	..	18,529,563	8,272	385,560
	All India	16,986,545	353,138	662,607	13,252	24,416	408	961,828	20,305	..	..	..	..	..	..	..	..	18,635,396	8,319	387,103
1858-59	Bengal	812	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	812	7	8
	Madras	26,799	319	..	..	..	..	..	..	..	..	..	..	..	..	..	..	26,799	12	319
	Bombay	15,189,131	339,045	196,044	4,376	..	..	275,410	6,147	..	..	..	..	..	..	..	..	15,660,585	6,991	349,568
	All India	15,216,742	339,372	196,044	4,376	..	..	275,410	6,147	..	..	..	..	..	..	..	..	15,688,196	7,010	349,895
1859-60	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	18,688,328	417,151	..	..	..	..	874,569	19,521	..	..	..	..	..	..	..	..	19,562,897	8,733	436,672
	All India	18,638,328	417,151	..	..	..	..	874,569	19,521	..	..	..	..	..	..	..	..	19,562,897	8,733	436,672
1860-61	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	750	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	700	..	10
	Bombay	21,063,289	470,823	37,968	1,223	..	..	270,816	6,045	..	..	9,632	43	..	..	..	..	21,381,705	9,505	478,134
	All India	21,063,989	470,833	37,968	1,223	..	..	270,816	6,045	..	..	9,632	43	..	..	..	..	21,382,405	9,505	478,144

* The Indian rupee is here converted at the exchange of two shillings.

† The quantities of wool exported from the Bengal Presidency in the year 1852-53, and the Madras Presidency in 1855-56, owing to their not having been officially recorded, are estimated from the given values.

NATIONAL ARCHIVES OF INDIA

2133. [5615] Thread used in the manufacture of Kashmere shawl.

2134. [5653] Pashum thread, cleaned.

2135. [5654] Pashum thread of ordinary quality.

2136. [5655] Pashum thread of finest quality.

The following fifteen Nos. 2137–2151 comprise a series of wool threads of various colours from Umritsur.

2137. [3522] Six samples of coloured wool thread for needle-work.

2138. [3523] A sample of blue wool thread.

2139. [3524] Do. dark yellow.

2140. [3525] Do. light do.

2141. [3526] Do. scarlet.

2142. [3527] Do. light blue.

2143. [3528] Do. green.

2144. [3529] Do. rose-coloured.

2145. [3530] Do. scarlet.

2146. [3531] Do. light green.

2147. [3532] Do. crimson.

2148 [3533] Do. black.

2149. [3534] Do. dark rose-coloured.

2150. [3535] Do. purple.

2151. [3536] Do. scarlet.

2152. [1041] Raw wool, Khelat.

2153. [777] Do. Sindh.

2153A. [822] Do. Do. Shikarpoor.

2154. [696] Do. Kutch.

2155. [1270] Black wool, Ahmedabad.

2156. [1270] White wool, Do.

2157. [2698] Uncleaned wool, Mysore.

2158. [2699] Woollen thread, Astagram, Mysore.

2159. [4267] Thibet wool, Darjeeling. DR. CAMPBELL.

2160. [1054] Goat's hair, Hyderabad.

2161. [1055] Camel's hair, Do.

2162–63. [981–5645] Raw wool, Bengal. A. M. DOWLEANS, Esq.

2164. [4484] Burmese twist, Rangoon.

2. SILK.

Among the textile fabrics of animal origin, silk holds a high rank. The Table (p. 100) shows the export of silk from India. The present Exhibition embraces not only a considerable number of the silks produced by the various kinds of silkworms, but also a very valuable collection of the silk-producing moths, together with drawings of the caterpillars and specimens of the cocoons. These latter have been prepared by MR. F. MOORE. They are contained in a series of trays in Case 8, and are as follows:—

Tray I.—Containing cocoons and moths of various species of mulberry-feeding silkworms (*Bombyx*), &c.

1. Cocoon of *Bombyx mori* (Linn.) from Cashmere stock.
2. Cocoons of do. as imported into England from the continent.
3. Cocoon of cross between Cashmere *B. mori* and Bengal *B. cræsi*, obtained by CAPT. T. HUTTON at Mussooree.
4. Cocoons of *B. textor* (Hutton), from Mussooree.
5. Do. of *B. sinensis* (?), from Bengal.
6. Golden-yellow cocoons, from Shanghai, as imported into England.
7. Pure white do. do. do.
8. Do. do. from Canton. do.
9. Cocoon of very large size; locality unknown.
10. Do. from the Punjab.
11. Cocoon, raw silk, and specimen of moth of *B. Huttoni* (Westw.), from Mussooree.
12. Do. do. *B Horsfieldi* (Moore), from Java.
13. Do. with drawing of caterpillar and cocoon of *Ocinara dilectula* (Walk.), from Java.

Tray II.—Containing samples of raw silk, produced by various species of *Bombyx*.

1. Silk from Surdah filature, Bengal.
2. Commercolly silk.
3. Silk from Rangamutty filature, Bengal.
4, 5, 6. Punjab silk—first and third year's cultivation.
7. Madras silk.
8. Mysore silk—raised from eggs originally from Bengal.
9. Silk obtained from cross between ♀ Cashmere (*B. mori*) and ♂ Bengal (*B. cræsi*?), from Bengal.
10. Do. obtained from cross between French and Bengal moths, from Surdah filature, Bengal.
11. White silk, obtained from the Boro-poloo, from Bengal.
12. Do. do. from Mysore, raised from eggs originally from Bengal.
13, 14. Do. do. from Bangalore.

Tray III.—Containing raw silk, produced by various species of *Bombyx*, from several localities, viz.—

1. Pat raw silk, from Durrang, Central Assam.
2, 3. Several samples of silk obtained from the large and small 'Pat Polo' or mulberry worm of Assam, from Durrang, Central Assam.
4. Silk raised in Munguldye, Assam.
5. 'Pat Soot,' Pat silk ungummed, from Seebsagur, Upper Assam.
6. 'Na Dhoroa Pat,' silk thread unbleached, from Nowgong, Do.
7. 'Dhoroa Pat,' silk thread bleached, do.
8. Silk from Sandoway, Arracan.
9. Burmese silk, from Tenasserim.
10. White silk, from Pegu.
11. Yellow silk, Do.
12. Do. silk from Cochin China.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE* OF SILK EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850-51 TO 1860-61 INCLUSIVE.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		North America		China		Arabian and Persian Gulf		Islands and Shores of the Indian Seas		All other Places		Total Exported to all Places		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850-51	Bengal	1,256,533	605,887	247	66	..	..	..	..	..	..	905	412	..	..	..	..	1,257,685	561	605,865
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	14,716	4,063	..	..	..	..	..	..	..	..	45,985	7,704	..	..	7,552	1,686	68,253	31	13,453
	All India	1,271,249	609,450	247	66	..	..	..	..	..	..	46,890	8,116	..	..	7,552	1,686	1,325,938	592	619,318
1851-52	Bengal	1,434,275	679,260	..	..	657	297	..	..	..	..	3,537	1,526	..	..	..	..	1,438,469	642	681,083
	Madras	210	116	..	..	..	..	..	..	..	..	..	..	..	..	..	..	210	..	116
	Bombay	3,173	1,161	..	..	..	..	..	..	..	..	15,825	2,323	9,878	3,471	1,789	486	30,665	14	7,441
	All India	1,437,658	680,537	..	..	657	297	..	..	..	..	19,362	3,849	9,878	3,471	1,789	486	1,469,344	656	688,640
1852-53	Bengal	1,361,155	658,673	987	497	576	296	..	..	..	..	82	27	..	..	..	..	1,362,800	608	659,493
	Madras	240	96	..	..	..	..	..	..	..	..	..	..	..	..	63	16	303	..	112
	Bombay	19,813	5,685	..	..	..	..	..	..	..	..	17,546	1,850	..	..	978	406	38,337	17	7,941
	All India	1,381,208	664,454	987	497	576	296	..	..	..	..	17,628	1,877	..	..	1,041	422	1,401,440	625	667,546
1853-54	Bengal	1,479,193	548,531	17,724	8,613	..	..	3,808	1,864	100	50	672	361	..	..	90,244	45,950	1,591,741	711	605,369
	Madras	200	88	..	..	..	..	..	..	..	..	254	8[illegible]	..	..	2,731	1,147	3,185	1	1,317
	Bombay	75,555	29,619	..	..	..	..	..	..	280	126	21,690	3,156	..	..	7,613	2,888	105,138	47	35,789
	All India	1,554,948	578,238	17,724	8,613	..	..	3,808	1,864	380	176	22,616	3,599	..	..	100,588	49,985	1,700,064	759	642,475
1854-55	Bengal	1,019,648	446,720	56,468	4,332	..	..	..	..	..	..	2,800	1,385	..	..	7,280	7,873	1,086,196	485	460,310
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	32,826	13,887	..	..	..	..	..	..	..	..	33,809	9,186	..	..	40,259	16,723	106,894	48	39,796
	All India	1,052,474	460,607	56,468	4,332	..	..	..	..	..	..	36,609	10,571	..	..	47,539	24,596	1,193,090	533	500,106
1855-56	Bengal	1,322,608	641,118	47,040	23,407	..	..	..	..	..	..	1,344	699	..	..	13,216	6,363	1,384,208	618	671,587
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	21,814	8,791	..	..	..	..	..	..	..	..	91,546	9,723	..	..	79,637	17,604	192,997	86	36,118
	All India	1,344,422	649,909	47,040	23,407	..	..	..	..	..	..	92,890	10,422	..	..	92,853	23,967	1,577,205	704	707,705
1856-57	Bengal	1,155,056	562,093	171,248	78,255	..	..	32,144	1,583	..	..	..	..	..	..	94,024	45,734	1,452,472	648	687,665
	Madras	11,250	3,922	..	..	..	..	..	..	..	..	..	..	..	..	..	..	11,250	5	3,922
	Bombay	141,044	55,043	9,520	3,332	..	..	..	..	..	..	3,704	371	..	..	138,788	31,806	293,056	131	90,552
	All India	1,307,350	621,058	180,768	81,587	..	..	32,144	1,583	..	..	3,704	371	..	..	232,812	77,540	1,756,778	784	782,139
1857-58	Bengal	1,341,200	658,718	125,216	64,193	784	390	1,120	583	..	..	112	65	..	..	49,392	23,906	1,517,824	678	747,855
	Madras	1,038	413	870	553	24	13	..	..	..	..	..	..	..	..	..	..	1,932	1	979
	Bombay	20,737	8,578	672	235	..	..	800	324	..	..	18,378	2,473	..	..	20,120	6,229	60,707	27	17,839
	All India	1,362,975	667,709	126,758	64,981	808	403	1,920	907	..	..	18,490	2,538	..	..	69,512	30,135	1,580,463	706	766,673
1858-59	Bengal	911,110	579,978	110,992	57,241	..	..	..	..	..	..	448	17,886	..	..	33,142	10,761	1,055,692	471	648,200
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	146,136	70,719	1,440	720	..	..	..	..	..	..	17,386	3,683	..	..	6,784	2,333	171,746	77	77,455
	All India	1,057,246	650,697	112,432	57,961	..	..	..	..	..	..	17,834	21,069	..	..	39,926	13,094	1,227,438	548	725,655
1859-60	Bengal	1,430,324	702,392	149,240	73,299	1,008	496	168	80	..	..	..	..	..	..	50,176	22,985	1,630,916	728	799,252
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	30,625	16,001	960	518	..	..	..	..	..	..	2,845	389	..	..	5,352	1,693	39,782	18	18,601
	All India	1,460,949	718,393	150,200	73,817	1,008	496	168	80	..	..	2,845	389	..	..	55,528	24,678	1,670,698	746	817,853
1860-61	Bengal	1,572,704	842,503	212,638	113,933	1,568	841	..	..	..	..	..	..	..	..	7,195	4,004	1,794,155	801	961,281
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	143,076	72,195	2	1	..	..	..	..	..	..	9,937	1,416	..	..	8,586	1,835	161,501	72	75,447
	All India	1,715,780	914,698	212,690	113,934	1,568	841	..	..	..	..	9,937	1,416	..	..	15,781	5,839	1,955,656	873	1,036,728

* The Indian rupee is here converted at the exchange of two shillings.

NATIONAL ARCHIVES OF INDIA

Tray IV.—Containing samples of cocoons, raw, thrown, and waste silk as imported into England from China (Shanghai) and Japan. Also a compressed batch of relaxed cocoons, stated to be imported from Southern Russia.

Tray V.—Containing drawing of caterpillar, specimens of cocoons and moths of *Attacus atlas* (Linn.) from China, Sylhet, Mussooree, Madras, and Java.

Tray VI.—Containing specimens of:—

1. Male and female moths of *Attacus Edwardsii* (White), from Sikkim.
2. Male *Attacus Guerini* (Moore), from Bengal.
3. *Attacus Ricini*, from Assam.
4. Eggs, caterpillars (preserved in spirits), cocoons, and male and female moths of the 'Ailanthus silkworm,' or cross between the Chinese and Bengal 'Eria;' reared in London in 1859 by MR. F. MOORE; also sample of the spun silk, and cloth manufactured in France.

Tray VII.—Containing specimens of eggs, drawing of caterpillar, specimens of cocoons, male and female moths of the 'Eria,' (*Attacus Cynthia* Drury), from China (Hong Kong), Nepal, Mussooree (reared in London from the cocoon), and Java.

Tray VIII.—Containing samples of 'Eria' or 'Arrindy' silk in several conditions (raw, dyed, flossed, &c.), with specimens of the cloth, from various districts in Assam, Bengal, &c.

Tray IX.—Containing—

1. Bundle of relaxed cocoons, raw and twisted silk, and cloth of the 'Mezankoorie,' (*Antheræa Mezankooria* Moore).
2. Drawing of caterpillar, specimens of cocoons and moths of *Actias Selene* (M'L.), from Darjeeling and Mussooree.

Tray X.—Containing eggs, drawing of caterpillar, specimens of cocoons, raw silk and thread, cloth, &c., of the 'Tusseh' or 'Tussur,' (*Antheræa Paphia* Linn.), from Darjeeling, Bhagulpore, &c.

Tray XI.—Containing drawing of caterpillar, specimens of the cocoons, raw and floss (dyed pink and yellow), silk, cloth, and moth of the 'Moonga' or 'Moogha,' (*Antheræa Assama* Helfer), from various districts in Assam.

Tray XII.—Containing specimens of various species of so-called 'Tusseh' moths.

1. *Antheræa Pernyi* (Guer.-Men.) drawing, North China.
2. *A. Perrottetti* (G. Men.) do. Pondicherry.
3. *A. Roylei* (Moore), moth and cocoon, from Mussooree.
4. *A. Helferi* (Moore), from Darjeeling.
5. *A. Jana* (Cram.), drawing, Java.
6. *A. Frithii* (Moore), Darjeeling.
7. *A. Larissa* (Westw.), drawing, Java.

Tray XIII.—Containing specimens of—

1. Male moth of *Saturnia pyretorum* (Westw.), from China.
2. Do. *Saturnia Grotei* (Moore), from Darjeeling.
3. Drawing of caterpillar and cocoon; male and female moths of *Loepa Katinka* (Westw.), from Java.
4. Drawing of *Neoris Huttoni* (Moore), from Mussooree.
5. Do. *Caligula Thibeta* (Westw.), and specimen of cocoon, from Mussooree.
6. Male and female moths of *Caligula Simla* (Westw.)
7. Drawing of Salassa Lola (Westw.), South-east Himalayas.
8. Drawing of caterpillar, specimens of cocoon, and moths of *Cricula trifenestrata* (Helfer), from Java.

2165-2178. [3786-3799] Raw silks (dyed). Reared and reeled by JAFFER ALLEE, of *Goordaspore*, under the direction of LALLA CHUMBA MULL.

2179. [7228] Bengal raw silk in its various stages. F. BASHFORD, Esq.

2180. [7299] Bengal raw silk (yellow and white), from the filatures of Messrs. LYALL, RENNIE & Co., *Berhampore* and *Calcutta*.

2181-2182. [2590-2582] Silk threads (dyed), Chittledroog, Mysore.

2183. [5616] Floss silk (dyed), Peshawur. MAHOMED AUZUM.

2184. [815] Floss silk (dyed), Shikarpore.

2185. [34*] Floss silk (dyed), Cachar.

2186. [41*] Silk thread (dyed), Sattara.

2187. [38*] Silk thread (dyed), Madras.

2188. [5100] Mezankoree silk, Assam. H. BAINBRIDGE, Esq.

2189. [8227] Mezankoree silk, Seebsagur, Assam. LIEUT. PHAIRE.

2190. [4775] Raw silk (dyed of various colours), Burmah. Messrs. HALLIDAY, FOX & Co.

2191. [9245] Raw silk (yellow), Bengal.

2192. [9244] Raw silk, Punjab.

2193. [5618] Raw silk, Cashmere.

2194. [9246] Raw silk, Mysore.

2195. [9247] Raw silk, Pegu.

2196. [9248] Raw silk, Arracan.

2197. [9249] Raw silk (white), Singapore.

2198. [5545] Raw silk (yellow and white), Pegu.

2199. [5543] 'Pat soota' (white floss), Luckimpore. H. L. MICHEL, Esq.

2200. [5099] 'Pat soota' Balasore, Assam.

2201. [4483] Raw silk, Rangoon. Messrs. HALLIDAY, FOX & Co.

2202. [2371] Raw silk (pale yellow), Mysore.

2203. [3785] Raw silk (white), Bokhara.

2204. [3784] Raw silk (yellow). Reared in Umritsur by MR. H. COPE, and reeled by JAFFIR ALLEE, of *Goordaspore*.

2205. [7060] Raw silk reared at Umritsur by MR. H. COPE.

NATIONAL ARCHIVES OF INDIA

2206. [816] Raw silk (pale yellow), Khorasan.

Almost all the raw silk used in the Punjab is produced in Bokhara, but it is not improbable that the submontane districts of the Punjab were formerly silk-producing countries, as we know that in the time of Justinian silk was produced in Sirhind. A series of experiments was made a few years ago by the government of the Punjab, with a view of ascertaining whether silkworms could be successfully reared in the plains, but the experiment was a failure, the heat and want of sufficient moist food having rendered the worms nearly unproductive. MR. COPE, of Umritsur, who originated the experiment, has, however, again tried it with considerable success.* In the month of February of the present year, the Manchester Chamber of Commerce reported thus on the samples forwarded from Umritsur by MR. COPE:—'The silk is very well and carefully reeled in every respect; the thread is clean, round, and uniform in size, well laid on the reel, and the hank a convenient size. It winds well, and passes through the other operations of throwing in a satisfactory manner. Its elasticity is about 1 in 6, equal to good China. If the silk can be supplied in quantity in every respect equal to sample, it would be worth 25*s.* per lb. in the present state of the market.' The sample of yellow silk has been valued at very nearly the same amount.

2207. [9243] Raw silk, Oude. R. CARNEGIE, Esq. Forwarded by the CHIEF COMMISSIONER OF OUDE.

Reared by MR. CARNEGIE at Seetapore, in Oude, from the silkworm of Cashmere. The cultivation of the silkworm in Oude is believed to be capable of great extension, as the mulberry abounds throughout the province, and the climate appears favourable to the rearing and thriving of the worms.

Of this sample Messrs. DURANT & Co., of Copthall Court, report as under:—'So far as we can judge from so small a sample, we consider it to be most creditable to the reeler, and such as affords good hope of future success.

'The colour and quality are good, in appearance strongly resembling silk of Lombardy. The thread is well made, clean, and fairly open in size; and we think that when tried on the throwing mill and in the loom, such silk will be found to yield satisfactory results. In every respect it is equal, and in some better, than the silk of Bengal, inasmuch as it has more nerve and less of the "fluffiness" and small foul which more or less seems to be an inherent condition of even the best of the European filatures of that country.

'The present value is about 25*s.* per lb.'

2208. [2589] Raw silk, Chittledroog, Mysore.

2209. [2591] Mulberry silkworm cocoons, Chittledroog, Mysore.

2210–11. [2708–9] Raw silks, No. 1 and 2, Bangalore, Mysore.

2212. [4005] Kora silk, Salem. H. A. BRETT, Esq.

2213. [3836] Raw Tusseh silk and cocoons, from Seonee, Jubbulpore.

This is produced extensively in the Seonee district, but is not manufactured into cloth there. It is exported to Nagpore, where it is woven into native cloths, called 'Tussur Sarees,' &c. No farther information can be given at present, as the trade is carried on by the Gonds, living in scattered jungles.*

2214. [5056] Raw Tusseh silk, Chynepore, Bengal.

2215. [6517] Raw Tusseh silk and thread in various states, Cuttack.

Locally called the '*Khosa*'—'*Khoseare.*' These are, it is presumed, the product of the *Saturnia Mylitta*, moth-caterpillar. The cocoons are found in abundance throughout the forest jungles of this division, and for the most part on the larger trees called the '*Asan*' (the *Pentaptera tomentosa*), the *Sal* or *Shorea robusta*, and less frequently on the common Indian plum or '*Barkolee*' tree. The wild cocoons are collected by the 'Sahars' and other poor and half wild castes (whose villages are often met with in the heart of the jungles), and sold so many for the pice, to the best advantage, but at no fixed rates. Each cocoon being very carefully enclosed within two leaves brought together and made to wrap around it, it is almost impossible to discover by mere sight on which trees cocoons are to be found. This is, therefore, done by observing the dung of the caterpillar under the tree. The eggs of the moth are also collected and preserved, and the caterpillar regularly reared and tended, in many parts in the Hill tracts, on trees pruned and preserved for the purpose. The cocoons vary much in size and colour, and there is also a very perceptible diversity in the texture and glossiness of the raw silk, which most probably depends on the species of tree on which the caterpillar may happen to have fed. The same variety is observable in the female moths, which are of three or four different sizes and colours. The mode of winding off the thread does not differ from that pursued in the case of the ordinary silkworm cocoon proper.†

2216. [2864] Tussur cocoons, Raepore, Bengal.

2217. [9250] Moonga silk, Assam.

2218. [7909] Moonga silk, Luckimpore, Upper Assam. BABOO CHAROO CHUNDA, *Mowzahdar.*

2219. [5094] Moonga silk, Balasore, Assam.

2220. [5095] Moonga silk, Kamroop, Assam. LIEUT-COL. HAMILTON VEITCH.

2221. [5097] Eria silk, Assam. LIEUT.-COL. HAMILTON VEITCH.

2222. [5098] Eria silk, Assam. H. BAINBRIDGE, Esq.

2223. [9251] Eria silk, Assam.

2224–25. [7094-95] Yellow Eria cocoons of castor oil silkworms, Nos. 1 and 2, Durrung, Assam. LIEUT. W. PHAIRE.

2226. [7096] White Eria cocoons of castor oil silkworms, Durrung, Assam. LIEUT. W. PHAIRE.

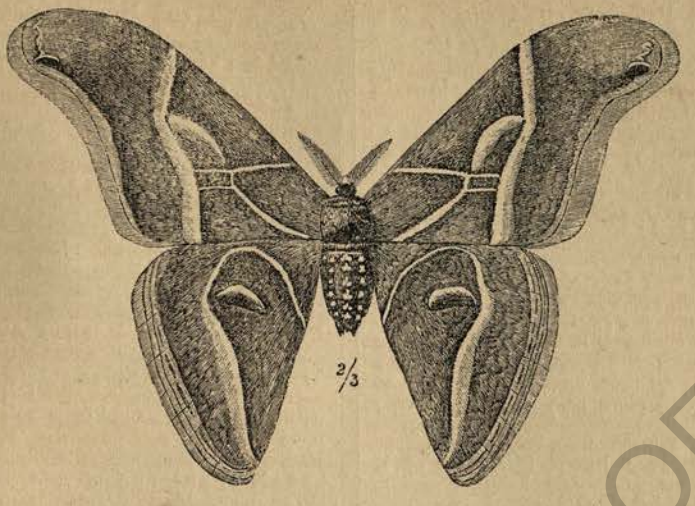
---

* Central Committee, *Lahore.*

* Local Committee, *Jubbulpore.*

† Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA



ERIA SILK MOTH.*

2227. [5546] White Eria cocoons and silk in various states, Assam. H. L. MICHEL, Esq.

2228. [5542] Eria silk, Luckimpore, JAWRAM DEKA BOROOVAH PESKA.

The silk-worm is reared extensively in Assam, and is fed either on the castor oil plant, or on the mulberry tree; the worm reared on the latter producing the richest and finest silk.

The insects are placed on the trunk of the tree, about 6 feet from the ground, a wisp of straw or green grass being tied around the stem below this point, to prevent the worms wandering downwards. As constant vigilance is necessary to protect the grubs from the attacks of owls and other birds, the rearing is generally conducted by an association of several families, the children being employed in turns, night and day, in watching the trees, armed with the common pellet-bow.†

II.—FOR DOMESTIC OR ORNAMENTAL PURPOSES, OR FOR THE MANUFACTURE OF IMPLEMENTS.

BONE, HORN, ETC.

2229. [4249] Pair of Buffalo horns, Burmah. Messrs. HALLIDAY, FOX & Co.

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF HORNS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED: UNITED KINGDOM Quan.	UNITED KINGDOM Value	FRANCE Quan.	FRANCE Val.	OTHER PARTS OF EUROPE Quan.	OTHER PARTS OF EUROPE Val.	AMERICA Quan.	AMERICA Val.	CHINA Quan.	CHINA Val.	ARABIAN AND PERSIAN GULFS Quan.	ARABIAN AND PERSIAN GULFS Val.	OTHER PARTS* Quan.	OTHER PARTS* Val.	TOTAL EXPORTED TO ALL PARTS Quantity	Quantity	Value
			£		£	cwt.	£	cwt.	£		£		£		£		tons	£
1857-58	Bengal . .	..	8,263	..	1,408	..	314	..	..	..	..	..	..	..	145	..	..	10,130
	Madras . cwt.	1,363	5,788	185	930	300	383	..	..	..	..	..	..	921	1,569	2,769	138	8,670
	Bombay . „	..	7,934	1,643	919	561	316	330	187	..	943	..	110	..	45	..	..	10,454
	ALL INDIA .	..	21,985	..	3,257	..	1,013	330	187	..	943	..	110	..	1,759	..	..	29,254
1858-59	Bengal . .	..	5,873	..	4,098	..	..	..	..	..	17	..	..	..	200	..	..	10,188
	Madras . No.	413,292	4,929	114,814	1,082	..	..	..	..	..	..	237	2	55,558	1,077	583,901	..	7,090
	Bombay . cwt.	..	6,986	1,034	621	..	..	..	..	..	576	..	79	..	..	..	..	8,262
	ALL INDIA .	..	17,788	..	5,801	..	..	..	..	..	593	..	81	..	1,277	..	..	25,540
1859-60	Bengal . .	..	5,900	..	2,667	..	522	..	..	..	88	..	..	..	382	..	..	9,559
	Madras . .	..	5,704	..	702	..	..	..	..	..	..	..	..	..	109	..	..	6,515
	Bombay . cwt.	..	6,975	100	60	..	..	..	..	..	1,317	29	17	..	..	..	..	8,369
	ALL INDIA „	..	18,579	..	3,429	..	522	..	..	..	1,405	29	17	..	491	..	..	24,443
1860-61	Bengal . .	..	10,909	..	4,190	..	462	..	..	..	50	..	..	..	203	..	..	15,814
	Madras { No.	406,328	6,211	127,675	1,675	..	..	..	..	..	..	..	..	8,549	426	542,552	..	8,312
	Madras { cwt.	1,971												323		2,294		
	Bombay . cwt.	..	12,138	758	455	..	..	100	60	..	1,215	4	3	..	..	..	..	13,871
	ALL INDIA „	..	29,258	..	6,320	..	462	100	60	..	1,265	4	3	..	629	..	..	37,997

* Received from J. H. JOHNSON, Esq. † LIEUT. W. PHAIRE.

NATIONAL ARCHIVES OF INDIA

2230. [4756] Pair of elephants' tusks, Burmah. Messrs. HALLIDAY, FOX & Co.

2231–2. [5157-8] Pair of wild buffalo horns, Cuttack.

2233–4. [5159–60] Pair of wild Gyal horns (*Bibos cavifrons*), Cuttack.

2235–6. [5161-2] Pair of horns (*Antilope cervicapra*), Cuttack.

These horns have been polished by native workmen. The tame buffalo horns, which are much smaller than the wild, form, together with the antlers of the spotted axis and the *Sambur* or *Cervus Hippelaphus*, an article of export to a considerable extent from this district. The local retail rates are, for black horn, about 5 annas per seer, and for deer horn (wholesale) 6 lb. weight per shilling.*

2237. [5914] Deer horn (*Cervus* sp.), Assam. LIEUT. W. PHAIRE.

The following specimens of horns (2238-2249) are exhibited by DR. CAMPBELL, *Darjeeling.*

2238. [2346] Horns of the wild yak (*Poephagus grunniens*).

2239. [2348] Horns of tame yak (*Poephagus grunniens*).

2240. [2353] Horns of Chiru antelope (*Kemas Hodgsoni*).

2241. [2360] Horns of Shou (*Cervus affinis*).

2242. [2354] Skull and horn of rhinoceros.

* Local Committee, *Cuttack.*

2243. [2356] Horns of Jharai (*Rusa* sp.).

2244. [2357] Horns of Gowree (*Bibos cavifrons*).

2245. [4271] Horns of black antelope.

2246–9. [2362–5] Deer horns (*Cervus* sp.).

2250. [2961] Shagreen.

V.—FOR PIGMENTS AND DYES.

Of animal origin, the only Indian dyes of importance are those afforded by the *Coccus lacca* insect.

2251. [41*] Lac dye from the *Coccus lacca*, Calcutta.

2252. [43*] Lac dye.

2253. [10104] Lac dye.

Is the well-known colouring matter of 'lac,' and is obtained from those incrustations by the insect *Coccus lacca.* It is employed chiefly as a red dye on wool.

2254. [1916*] Cochineal, Calcutta.

2255. [10166] Purree or Indian yellow. Monghyr. W. H. HENDERSON, Esq.

Produced from the urine of horned cattle fed on mango leaves. It is used in the locality of production, and also sent to Calcutta for exportation.*

* W. H. HENDERSON, Esq.

SECTION C.—VEGETABLE SUBSTANCES USED IN MANUFACTURES.

I.—GUM AND RESIN SERIES.

This subdivision comprises the gums, the resins, and the gum resins. The Table (p. 105) shows the extent to which these are exported.

GUMS.

2256. [136*] Gum ghati (*Acacia arabica*), Bombay.

2257. [6037] Babool gum (*A. arabica*), Bombay.

2258. [6208] Babool gum, Lucknow.

2259. [6221] Babool gum (*Acacia arabica*), Calcutta.

2260. [1948] Babool gum, Jhansee.

2261. [6050] Babool gum, Ahmedabad.

2262. [141*] Babool gum, Calcutta.

2263. [148*] Babool gum, Bengal.

2264. [2585] Acacia gum, Bangalore, Mysore.

2265. [2587] Acacia gum, Chittledroog, Mysore.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF GUMS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857-58 TO 1860-61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED														TOTAL EXPORTED TO ALL PARTS		
		UNITED KINGDOM		FRANCE		OTHER PARTS OF EUROPE		AMERICA		CHINA		ARABIAN AND PERSIAN GULFS		OTHER PARTS				
		Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quantity		Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1857-58	Bengal	117	354	7	30	..	..	18	19	..	..	..	..	4	20	141	7	423
	Madras	..	13	..	17	..	..	..	..	..	..	..	..	..	104	..	..	134
	Bombay	..	21,755	..	313	..	170	..	240	..	3,297	..	570	..	112	..	..	26,457
	ALL INDIA	..	22,122	..	360	..	170	..	259	..	3,297	..	570	..	236	..	..	27,014
1858-59	Bengal	..	..	160	254	..	..	82	96	..	..	..	..	6	20	248	12	370
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	28	65	28	1	65
	Bombay	..	22,166	29	29	..	..	..	..	11,633	7,384	..	956	..	301	..	..	30,836
	ALL INDIA	..	22,166	189	283	..	..	82	96	11,633	7,384	..	956	..	386	..	..	31,271
1859-60	Bengal	..	..	144	274	..	..	..	..	3	6	..	..	140	449	287	14	729
	Madras	..	27	..	..	..	..	..	..	..	..	..	..	..	132	..	..	159
	Bombay	9,879	10,065	36	27	..	..	..	..	6,278	5,019	432	901	125	214	16,749	837	16,226
	ALL INDIA	..	10,092	180	301	..	..	..	..	6,281	5,025	432	901	265	795	..	..	17,114
1860-61	Bengal	37	88	40	224	..	..	..	..	82	229	113	147	10,028	8,345	10,300	515	9,033
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	102	..	..	102
	Bombay	9,671	16,307	..	..	..	..	75	75	4,250	3,288	129	245	267	373	14,392	720	20,288
	ALL INDIA	9708	16,395	40	224	..	..	75	75	4,332	3,517	242	392	..	8,820	..	..	29,423

2266. [2743] Acacia gum, Nuggur, Mysore.

2267. [2585] Acacia gum, Bangalore, Mysore.

2268. [4898] *Acacia speciosa*, Chingleput. DR. SHORTT.

2269. [4896] *A, sundra*, Chingleput, DR. SHORTT.

2270. [6046] Kheir gum (*A. catechu*), Ahmedabad.

This tree yields the largest proportion of the Cutch, so much employed in tanning and dyeing, and which is obtained by boiling the wood and inspissating the liquor. The gum exudes freely from the bark when wounded, and is of the character of an ordinary gum arabic.

2271. [142*] *Vachellia farnesiana*, Bengal.

2272. [4001] *V. farnesiana*, Salem. H. A. BRETT, Esq.

This is a useful gum arabic, and is exuded freely and in considerable quantities by the tree which produces it. The flowers, under the name of wattle flowers, are much employed in perfumery for their delicious fragrance.

2273. [6002] Dhowla gum, Ahmedabad.

2274. [6044] Dower goond, Ahmedabad.

2275. [2860] Dhowrah tree gum, Raepore.

2276. [7184] Koonee gond (*Odina wodier*), Calcutta.

2277. [139*] Koonee gond (*O. wodier*), N. W. India.

This gum resembles the true gum arabic both in appearance and properties, and is often largely mixed up with the East India arabic of commerce, which often contains gum collected indiscriminately from a number of different trees, including several species of *Acacia, Odiner wodier*, and *Feronia elephantum.*

2278. [4908] *Prosopis spicigera*, Chingleput. DR. SHORTT.

2279. [4911] Soap tree gum (*Sapindus emarginatus*), Madras. DR. SHORTT.

2280. [4919] *Wrightia tinctoria*, Chingleput. DR. SHORTT.

2281. [4903] *Erythrina indica*, Do. Do.

2282–84. [6432–34] Gum from jungle trees, Chota Nagpore.

2285. [4917] Shamgathalee mug, Chingleput. DR. SHORTT.

NATIONAL ARCHIVES OF INDIA

2286. [4918] Poongkalee gum, Chingleput. DR. SHORTT.

2287. [4901] Palmyra gum (*Borassus flabelliformis*), Do. Do.

2288. [73*] Margosa gum (*Melia azedarach*), Travancore.

2289. [37*] Margosa gum (*do.*), Palamcottah.

2290. [124*] Gum of *Buchanania latifolia.*

2291. [4904] Wood apple gum (*Feronia elephantum*), Chingleput. DR. SHORTT.

This gum is abundant. From its ready solubility without residue, it gives the best mucilage for making ink.

2292. [69*] Marking nut gum (*Semecarpus anacardium*), Travaore.

2293. [79*] Moringa (*Moringa pterygosperma*), Travancore.

2294. [4905] Moringa, Chingleput. DR. SHORTT.

The gum of the *Moringa* somewhat resembles tragacanth. It exudes freely whenever an incision is made in the bark. It is used by the natives in headache mixed with milk and rubbed on the temples, and is also employed as a local application for pains in the limbs.

2295. [4899] Gum of *Ailanthus excelsa*, Chingleput. DR. SHORTT.

2296. [6054] Kuda na gond (*Sterculia* species), Ahmedabad.

2297. [132] Kuteera gum (*Sterculia urens*), Bengal.

2298. [6042] Kuteera gum, Ahmedabad.

Kuteera gum was known as false tragacanth before the tree which produces it was correctly determined. Both this and the following gum resembles a coarse tragacanth, and is employed in India as a substitute for the genuine gum, which is the produce of the south of Europe.

2299. [38*] Gum of *Cochlospermum gossypium*, North-west India.

This gum is also sometimes called *Kuteera*. It exudes from every part of the tree when broken, and resembles an inferior tragacanth.

2300. [10154] Kotilla or Tragacanth, Calcutta.

2301. [4912] Gum of *Stereospermum suaveolens*, Chingleput. DR. SHORTT.

2302. [4913] Gum of *Terminalia alata*, Chingleput. DR. SHORTT.

2303. [4895] Gum of *Calophyllum inophyllum*, Chingleput. DR. SHORTT.

2304. [4897] Gum of *Cassia auriculata*, Chingleput. DR. SHORTT.

2305. [4906] Gum of *Poinciana alata*, Chingleput. DR. SHORTT.

2306-7. [4759-60] Ta Mazie gum, Burmah. Messrs. HALLIDAY, FOX & Co.

2308. [6052] Daweej gum, Ahmedabad.

2309. [4916] Selembai, Chingleput. DR. SHORTT.

TINCTORIAL GUMS.

2310. [6382] Mangosteen gum (*Garcinia mangostana*), Malacca. A. A. DE WIND, Esq.

A few tear-like pieces of this gum is all that is exhibited. These resemble gamboge in appearance, but the sample is too small to venture a correct judgement.

2311. [189] Ardalla (*G. pedunculata*), Mangalore. V. P. COELHO, Esq.

This gum bears a great resemblance to the gamboge of the Wynaad; and is interesting as being the first sample sent to England derived from this source.

2312. [1*] Gamboge (*G. pictoria*), Wynaad.

A very superior kind of gamboge, to which the attention of the trade might be advantageously drawn.

2313. [1896] Gamboge, Bengal.

2314. [6010] Pipe gamboge, Bombay.

2315. [6663] Pipe gamboge, Siam. G. ANGUS, Esq.

2316. [6695] Gamboge (*G. cochinchinensis*), Cambodia. JOSE D'ALMEIDA, Esq.

This is the true pipe gamboge of Siam, and the ordinary gum gamboge of British commerce.

2317. [6383] Gutta Kandees, Malacca. A. A. DE WIND, Esq.

From the wild mangosteen.

2318. [5*] Gum from *Hebradendron cambogioides.*

This is the gamboge which is known commercially as Ceylon gamboge. It is of good quality, and is made up in cakes or irregular masses.

2319. [6016] Heradukhun (*Pterocarpus draco*), Bombay.

2320. [4063] Dragon's blood, Pinang.

2321. [11*] Dragon's blood, Singapore.

2322. [6664] Dragon's blood, Sumatra. G. ANGUS, Esq.

NATIONAL ARCHIVES OF INDIA

2323. [7136] Kino (*P. Wallichii*), Rangoon.

This is affirmed to be the produce of the above tree, which is one of the commonest forest trees in the locality whence it is derived; the ordinary commercial kino is obtained from *Pterocarpus marsupium.*

2324. [19*] Vangay kino (*P. dalbergioides*).

This kino differs but little in appearance and properties from the ordinary kino.

2325–6. [4909, 3356] Kino (*P. marsupium*), Bengal.

This is the common East India kino. It is employed medicinally as an astringent.

2327. [7127] Moochrus (*Bombax heptaphyllum*), Calcutta.

This astringent gum, which exudes from the bark rather freely, is employed for tanning leather as a substitute for kino; it is also used medicinally for its astringent property and its supposed strengthening virtue.

2328. [4907] Butea gum (*Butea frondosa*), Chingleput. DR. SHORTT.

2329. [6600] Dhak gum (*B. frondosa*), Lucknow.

This is sometimes called Pulas kino; it is very astringent, some specimens yielding 73 per cent. of tannin. In the North-west Provinces the natives employ it for precipitating their indigo and in tannin. It contains a durable colouring matter, which generally renders it objectionable for the latter purposes.

MEDICINAL GUM RESINS.

2330. [6026] Assafœtida (*Narthex assafœtida*), Bombay.

2331. [1851] Assafœtida (*Narthex assafœtida*), Punjab.

The concrete juice of the root is obtained by slicing off the stem obliquely, collecting the liquid which exudes, and drying it. It is obtained chiefly from Bokhara. By the natives it is employed as a condiment to food, as a carminative in colic, and also as a stimulant tonic in paralysis, tremors, and epilepsy. Dose, gr. iv. Price, 2*s.* per lb.

2332. [31*] Ammoniacum (*Dorema ammoniacum*), Persia.

2333. [6033] Ooshak (*D. ammoniacum*), *viâ* Bombay.

Gum ammoniac is not an Indian product, but is obtained from Persia. It is a gum resin exclusively medicinal, and is employed as a stimulant expectorant, and antispasmodic.

2334. [6035] Dikamali (*Gardenia lucida*), Bombay.

This resin is obtained chiefly in Canara and Mysore, and is stated to have been found useful in the hospitals in keeping away flies from sores.

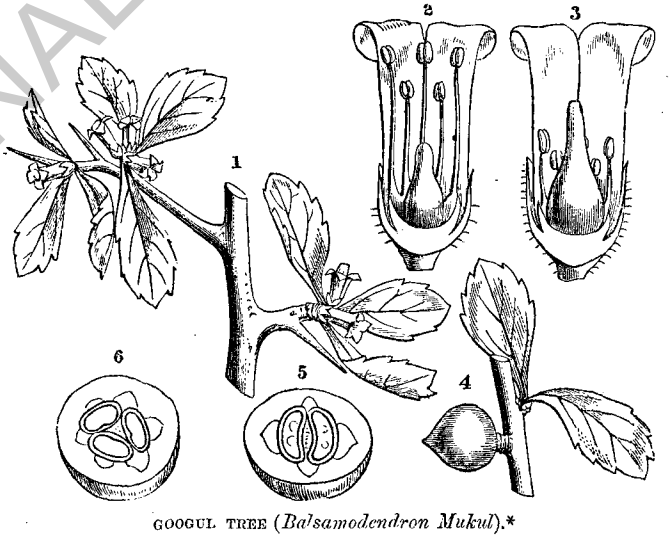
2335. [1818] Sarcocolla (*Penea mucronata*), Kabul.

Anzerut, a gum resin obtained from the bark of the *Penea mucronata*, called sometimes Sarcocolla, and obtained chiefly from Kabul. It is used either in powder or infusion as a laxative, and as an alterative in cancer. Dose 1 drachm. Price 1*s.* per lb. Formerly used in European medicine, chiefly as an application for wounds, whence its name of Sarcocolla.

2336. [9924] Bdellium (*Balsamodendron* species), Calcutta.

2337. [7126] Googul (*B. agallocha*), Do.

2338. [51*] Googul (*B. myrrha*), Do.



GOOGUL TREE (*Balsamodendron Mukul*).*

* Cut received from *Pharmaceutical Journal.*

NATIONAL ARCHIVES OF INDIA

2339. [6051] Heera bol, Bombay.

2340. [6056] Googul (*B. Roxburghii*), Bombay.

The sources of these gums are given as sent from India; there is still some confusion in the botanical sources of the substance known in India as googul and of the bdellium and myrrh of commerce.

Part of the above samples appear to be the produce of *Balsamodendron Mukul.*

2341. [6572] Benzoin (*Styrax benzoin*), *viâ* Calcutta.

2342. [61*] Benzoin, Sumatra.

2343. [6384] White benzoin, Malacca. A. A. DE WIND, Esq.

This sample merits attention.

2344. [6674] Benzoin, Sumatra.

Benzoin has an agreeable fragrant odour, and a sweetish balsamic taste. It is obtained chiefly from Sumatra and Siam. A very interesting variety (No. 6384) is exhibited from Malacca. In Sumatra, benzoin is obtained by making incisions into the tree in its seventh year. The juice which first exudes is the purest and most fragrant; it hardens on exposure to the air, and becomes brittle and semi-transparent.

2345. [10147] Olibanum (*Boswellia thurifera*), Calcutta.

2346. [10152] Olibanum, Calcutta.

2347. [6048] Olibanum, Bombay.

2348. [6219] Olibanum, Calcutta.

This balsamic gum resin is a considerable article of export from Bombay and other ports of India. The best is found in pieces as large as a walnut, of a bright yellowish colour, sometimes inclining to reddish or brown, covered on the outside with a whitish bloom. It burns with a clear and steady light, diffusing a grateful fragrance. In taste it is slightly bitter, and not perfectly soluble in water or alcohol.

The most important resin belonging to the next group is lac. It is formed by the insect *Coccus lacca*, which feeds upon various trees in India. It is found encircling twigs and branches.

The broken twigs covered with these incrustations are called 'stick lac' in commerce, and is sufficiently represented, as the undernamed sources abundantly testify. After the colour has been extracted and further purified, shell lac results. The Table (p. 109) indicates the extent to which lac is exported from India.

2349. [5396] Crude lac, Shahabad. R. W. BINGHAM, Esq.

2350. [2*] Stick lac, Vizagapatam.

2351. [1949] Lac from *Acacia arabica*, Jhansee.

2352. [10103] Shell lac, Do.

2353. [6429] Stick lac, Chota Nagpore.

2354–5. [7160–7162] Stick lac, Cuttack.

2356. [2839] Lac, Raepore.

2357–8. [1940–1] Shell lac, Umritsur.

2359. [6680] Shell lac, Siam. G. ANGUS, Esq.

2360. [6005] Lac from *Zizyphus jujuba*, Ahmedabad.

2361. [7512] Lac, from *Urostigma religiosa*, Ahmedabad.

2362. [6045] Chupra lac, Poona.

2363. [4002] Shell lac, Salem. H. A. BRETT, Esq.

2364–5. [6606–7161] Lac, Durrung, Assam. LIEUT. PHAIRE.

2366–7. [7163–4] Stick lac, Burmah.

2368. [2586] Stick lac, Bangalore, Mysore.

2369. [2588] Lac, Chittledroog, Mysore.

2370. [2742] Lac, Astagram, Mysore.

2371. [2580] Sealing wax, Chittledroog, Mysore.

2372. [9170] Sealing wax, Cuttack.

RESINS.

2373. [10152] Mastic (*Pistacia lentiscus*), Bengal.

2374. [6007] Mastic, Bombay.

2375. [1821] Mastic, Kabul.

A gum resin which exudes from the young branches and is scraped off. It forms white translucent tears,

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF LAC EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850-51 TO 1860-61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Other Parts		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1850-51	Bengal	40,219	76,534	6,575	9,763	6,072	7,549	18,448	41,454	..	..	219	119	296	365	71,829	3,596	135,784
	Madras	973	898	762	515	..	..	..	..	..	..	54	107	..	..	1,789	89	1,520
	Bombay	848	1,014	..	..	..	..	..	..	..	..	586	858	..	1	1,434	72	1,873
	All India	42,040	78,446	7,337	10,278	6,072	7,549	18,448	41,454	..	..	859	1,084	296	366	75,052	3,757	139,177
1851-52	Bengal	30,449	58,041	2,076	3,687	5,268	6,457	18,641	36,780	4	6	9	5	18	20	56,465	2,823	104,996
	Madras	..	..	828	705	..	..	..	..	..	..	61	122	..	..	889	44	827
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	All India	30,449	58,041	2,904	4,392	5,268	6,457	18,641	36,780	4	6	70	127	18	20	57,354	2,867	105,823
1852-53	Bengal	52,508	103,993	9,365	15,768	2,356	3,017	11,847	27,192	6	7	256	146	15	19	76,353	3,818	150,142
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	35	50	..	..	..	..	..	..	..	..	339	488	..	..	374	19	538
	All India	52,543	104,043	9,365	15,768	2,356	3,017	11,847	27,192	6	7	595	634	15	19	76,727	3,837	150,680
1853-54	Bengal	41,246	54,374	7,413	13,818	2,973	3,839	16,987	28,919	5	7	27	18	1,594	1,876	70,245	3,512	102,351
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	22	32	9	17	..	..	..	..	..	..	278	389	1	3	310	15	441
	All India	41,268	54,406	7,422	13,835	2,973	3,839	16,987	28,919	5	7	305	407	1,595	1,879	70,555	3,527	102,792
1854-55	Bengal	33,384	63,089	4,108	7,947	1,451	1,831	11,479	17,830	12	12	..	..	272	1,366	50,696	2,535	92,075
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	22	31	..	..	..	..	..	..	..	..	102	126	..	..	134	7	157
	All India	33,406	63,120	4,108	7,947	1,451	1,831	11,479	17,830	12	12	102	126	272	1,366	50,830	2,542	92,232
1855-56	Bengal	26,425	59,404	6,296	10,443	2,386	3,008	21,710	52,582	438	578	8	11	472	384	57,735	2,887	126,411
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	376	467	..	..	376	19	467
	All India	26,425	59,404	6,296	10,443	2,386	3,008	21,710	52,582	438	578	384	478	472	384	58,111	2,906	126,878
1856-57	Bengal	24,335	61,997	4,243	6,478	1,935	2,710	17,734	32,386	19	23	..	..	388	378	48,654	2,433	103,972
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	308	369	..	..	..	..	..	..	..	..	802	1,234	..	..	1,110	56	1,603
	All India	24,643	62,366	4,243	6,478	1,935	2,710	17,734	32,386	19	23	802	1,234	388	378	49,764	2,489	105,575
1857-58	Bengal	33,540	75,755	8,614	13,156	1,760	2,060	7,703	14,521	4	6	9	11	379	465	52,009	2,600	105,974
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	70	115	70	3	115
	Bombay	538	882	..	..	..	..	..	..	..	..	..	702	3	4	..	..	1,588
	All India	34,078	76,637	8,614	13,156	1,760	2,060	7,703	14,521	4	6	..	713	452	584	..	..	107,677
1858-59	Bengal	10,883	52,818	1,856	2,500	..	..	12,657	23,871	..	..	..	..	1,330	1,057	26,726	1,336	80,246
	Madras	264	181	..	..	..	..	..	..	..	..	..	..	..	..	264	13	181
	Bombay	..	..	..	..	..	..	..	..	..	..	100	140	..	..	100	5	140
	All India	11,147	52,999	1,856	2,500	..	..	12,657	23,871	..	..	100	140	1,330	1,057	27,090	1,354	80,567
1859-60	Bengal	27,750	54,237	1,665	3,535	342	419	9,308	19,359	..	..	..	..	108	131	39,173	1,959	77,681
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	37	52	..	..	..	..	..	..	..	..	215	304	..	5	252	13	361
	All India	27,787	54,289	1,665	3,535	342	419	9,308	19,359	..	..	215	304	108	136	39,425	1,972	78,042
1860-61	Bengal	32,711	126,041	3,088	13,066	1,014	4,239	6,644	27,699	47	172	..	..	88	215	43,592	2,179	171,432
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	20	52	..	..	..	..	..	..	..	..	116	162	..	..	136	7	214
	All India	32,731	126,093	3,088	13,066	1,014	4,239	6,644	27,699	47	172	116	162	88	215	43,728	2,186	171,646

NATIONAL ARCHIVES OF INDIA

obtained principally from Kabul. It is used by the natives as an astringent in diarrhœa, which property it owes to the volatile oil contained in it; 'also in all diseases depending on an undue accumulation of phlegm.' Price 1s. per lb.*

2376. [10699] Piney resin (*Vateria indica*), Mangalore. V. P. COELHO, Esq.

2377. [10699] Piney resin (refined) Mangalore. V. P. COELHO, Esq.

2378. [88*] Piney resin, Malabar.

2379. [147] Dhoop (*V. indica*).

2380–1. [77*–90*] Dhoop, Travancore.

As these specimens indicate, there are at least two distinct varieties of the piney resin. Some resemble amber both in lustre and fracture; others are of various shades of colour, from light green to yellow.

2382. [108*] Black dammar (*Canarium strictum*), Malacca.

Black dammar is of a shining black colour when viewed in mass, but on closer examination appears to be of a reddish hue and translucent. It occurs in stalactitic masses.

2383. [103*] Resin of *Canarium strictum*, Seebsaugor.

2384. [6686] Dammar Daging, or rose dammar, Singapore. G. ANGUS, Esq.

$4½ per picul.

2385. [6378] Dammar Batu (*Shorea robusta*), Singapore. G. ANGUS, Esq.

2386. [7135] Dhonah, Calcutta.

2387–8. [6426–7] Dhonah, Chota Nagpore.

2389. [6700] Dammar Batu (*S. robusta*), Sumatra. T. NEUBRONNER, Esq.

$1½ per picul. Boiled with common oil and used for ships' bottoms.

2390. [117*] Saul resin (*S. robusta*), Midnapore.

2391. [6220] Sakhoo (*S. robusta*), Lucknow.

2392. [7129] Dhoona (*S. robusta*), Cuttack.

A resin, locally called '*Jhoona*' or '*Dhoona*.' It is obtained from the *Shorea robusta*, one of the most abundant forest trees in Indian jungles, and is procured by making incisions in the stem of the tree from which the resin exudes. The local retail price is about 3 annas, that is 4½*d.* per seer of 2½ pounds weight.*

2393. [4813] Dhoona (*S. robusta*), Burmah. Messrs. HALLIDAY, FOX & Co.

2394. [6385] Dammar Keejee, Malacca. A. A. DE WIND, Esq.

Procurable in large quantities.

2395. [6379] Dammar Mata Kooching, Singapore. T. NEUBRONNER, Esq.

2396. [6678] Dammar Mata Kooching, Eastern Archipelago. G. ANGUS, Esq.

$8½ per picul. Procurable in large quantities. Boiled down for varnish.

2397. [6004] Dammar (*Dammara orientalis*), Bombay.

2398. [6707] Dammar, Malay Peninsula. G. ANGUS, Esq.

Largely exported from Singapore to Great Britain and other ports. It is a very clear transparent resin, much in request for the manufacture of varnishes.

2399. [7130] Dammar Pooy Nyat, Moulmein.

2400. [2518] African Animé. H.H. the SULTAN of ZANZIBAR.

2401. [6011] Animé, Bombay.

It is easily distinguished from copal by its softening in the mouth, and its ready solubility in alcohol.

2402. [110*] Gaup resin (*Embryopteris glutinifera*), Bhagulpore.

Gaup tree resin is dark-coloured in the mass, and approximates in appearance to the black dammar of Travancore, except that it is in smaller masses or tears, and is not so vitreous in its fracture.

2403. [105*] Resin (*Dipterocarpus*, species), Seebsaugor.

All dipterocarpous trees abound in a resinous juice, and from one of these this sample of resin has been obtained.

---

* Central Committee, *Lahore.*

* Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

2404. [2847] Surry tree resin (*Vatica*, a species of), Raepore.

2405. [4003] Resin, Salem. H. A. BRETT, Esq.

2406. [7130] Ing Donay (*Vatica tambuggaia*), Moulmein.

2407. [4761] A resin, Burmah. Messrs. HALLIDAY, FOX & Co.

2408. [6381] Gutta Runghus from red wood tree, Malacca. A. A. DE WIND, Esq.

Procurable in large quantities.

2409. [7128] Pine resin (*Pinus longifolia*), Calcutta.

2410. [6003] Pine resin, Bombay.

2411. [6465] Thus, Shahjehanpore.

2412. [6053] Suk Muniar, Bombay.

A resin coloured artificially and sold for scammony.

OLEO-RESINS.

2413. [5184] Black varnish (*a*), (*Melanorrhœa usitata*), Burmah.

2414. [5185] Black varnish (*b*), Burmah.

2415. [5186] Black varnish (*c*), Burmah.

This is the celebrated Burmese black varnish, obtained from *Melanorrhœa usitata*. In varnishing an article, the Burmese first give it a coat of *a*; when this is dry, they lay a coat of *b* over it, and finish with a coat of *c* over all. Price 120R. for first quality, 80R, for second, and 60R. for third quality, for 365 lbs.*

2416. [7131] Tset-tsee, Moulmein.

The wood oils may be said to form the link between the oils and resins. They hold a balsamic resin in solution, and are obtained from various of the Order *Dipterocarpeæ*, some of which yield the dammars of commerce.

2417. [5711] Teak oil (*Tectona grandis*), Cuttack.

A kind of wood oil obtained from the teak tree.

2418. [5698] Emsleekee wood oil, Moulmein.

2419. [10700] Wood oil, Mangalore. V. P. COELHO, Esq.

2420. [5695] Capawa wood oil, Moulmein.

2421. [5693] Capawa wood oil, Akyab.

2422. [7137] Eintsee, Arracan.

2423. [6337] Minia Kayu, Malay Peninsula.

2424. [1893] Gurjun (*Dipterocarpus turbinatus*), *viâ* Calcutta.

2425. [5702] Gurjun, Chittagong.

This oil is obtained from a large tree, formerly common in the hills of this district. The oil is obtained by cutting a hole in the tree, about 3 feet from the ground; the cut being about 4 to 5 inches deep into the trunk of the tree. The base is hollowed out to retain the oil. The whole of the hollow is cleared with fire, without which no oil exudes; after it is cleared the oil exudes, and is collected in the hollow at the base, and removed at intervals. The oil is thus extracted year after year, and sometimes there are two or three holes in the same tree, while the tree does not die. The oil is allowed to settle, when the clear part separates from a thick portion, which is called the 'guad.' If a growing tree is cut down and cut to pieces, the oil exudes and concretes on the stem and ends of the pieces, very much resembling camphor, with an aromatic smell also. It is said that the tree yields from 3 to 5 maunds yearly, i. e. 240 to 400 lbs., and the same tree will yield oil for several years. It is a good balsamic medicine, and is very generally used as a substitute for copaiba; but it would be more valuable as a varnish: it is preservative to wood, to which it gives, with little trouble of application, a fine surface and polish; it becomes, however, white and milky if exposed to wet. It can be had at Chittagong in large quantities at 10R. per maund.*

2426. [5679] Choca oil, distilled from country resin, Cuttack.

2427. [4068] Barus camphor (*Dryobalanops camphora*), Sumatra.

The camphor is found secreted in cavities of the wood. It is of great value, and is only obtained from trees of a certain age. It sells at Padang at upwards of 3 dollars for a lb.

2428. [7132] Camphor (*Laurus camphora*), Calcutta.

2429. [6014] Camphor, Calcutta.

This is the produce of a Chinese and Japanese laurel, and is largely obtained from the island of Formosa. It is not so highly esteemed in the East as the Barus camphor, and consequently does not command such extravagant prices. All parts of the plant contain camphor diffused through them, but it is obtained chiefly from the wood of the stem, branches, and root. These are cut in chips and boiled, and the camphor is obtained by distillation.

2430. [5130] Cup of Camphor (*L. camphora*), Calcutta. BABOO GOPAUL CHUNDAR GOOPTA.

* Local Committee, *Rangoon*.

* Local Committee, *Chittagong*.

NATIONAL ARCHIVES OF INDIA

ELASTIC AND PLASTIC GUMS.

2431. [6509] Caoutchouc (*Ficus elastica*), Durrung, Assam. LIEUT. W. PHAIRE.

The *Ficus elastica* is indigenous to Assam, and the foot of the Metur hills in Nowgong, as well as the Chardwar Forests in Durrung, abound with this tree.*

2432. [5572] India rubber, Cossia Hills. J. N. MARTIN, Esq.

2433. [10229] Indian caoutchouc, Goruckpore. GEORGE OSBORNE, Esq.

'A new production collected and prepared from the various plants of the district of Goruckpore.'

2434. [6318] Gutta Babee caoutchouc, Malacca. T. NEUBRONNER, Esq.

2435. [6317] Gutta Gree grip caoutchouc, Malacca. Do.

2436. [6701] India rubber, Eastern Archipelago. G. ANGUS, Esq.

2437. [6380] Gutta Terbole, Malacca. A. A. DE WIND, Esq.

'Used to adulterate gutta percha.'

2438. [6324] Gutta percha (*Isonandra gutta*), Eastern Archipelago. G. ANGUS, Esq.

2439. [6693] Gutta percha as imported into Singapore. G. ANGUS, Esq.

2440. [6693] Gutta percha, Malay Peninsula. JOSE D'ALMEIDA, Esq.

2441. [6316] Gutta percha, Malacca. T. NEUBRONNER, Esq.

* LIEUT. W. PHAIRE.

2442. [161*] Gutta percha, Singapore.

The gutta percha tree is a native of the Malayan Peninsula; but not the only one which yields it.

2443. [7083] Gutta percha cup. DR. RIDDELL.

2444. [6319] Pair of gutta percha buckets, Singapore. HON. COL. CAVANAGH.

2445. [164*] Pauchontee (*Isonandra acuminata*), Travancore.

The exudation from the trunk has some resemblance to the gutta percha of commerce. According to General Cullen, 'in 5 or 6 hours upwards of 1½ lbs. was collected from 4 or 5 incisions in one tree.'

2446. [154*] Cattimundoo (*Euphorbia Cattimundoo*), Madras. W. ELLIOT, Esq.

This gum is worthy of more attention than it has yet received.

2447. [4924] Gutta (*E. antiquorum*), Chingleput. DR. JOHN SHORTT.

The true Euphorbium is supposed to be obtained chiefly from *E. officinarum.*

2448. [4949] Gutta (*E. tortilis*), Chingleput. DR. JOHN SHORTT.

Very similar to the former in nature and properties.

2449. [4965] Mudar gutta (*Calotropis gigantea*), Chingleput. DR. JOHN SHORTT.

DR. RIDDELL calculates that 10 average sized plants will afford as much juice as will make 1 lb. of this gutta-percha-like substance.

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF DYES (EXCLUSIVE OF INDIGO AND MUNJEET) EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED: UNITED KINGDOM		FRANCE		OTHER PARTS OF EUROPE		AMERICA		CHINA		ARABIAN AND PERSIAN GULFS		OTHER PARTS		TOTAL EXPORTED TO ALL PARTS		
		Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quantity		Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1857-58	Bengal	11,035	26,017	23,755	6,785	1,722	505	2,938	1,074	394	293	..	..	482	848	40,326	2,016	35,522
	Madras	24,246	18,535	11,657	8,961	906	1,923	..	..	..	..	3,079	1,403	8,154	3,325	48,042	2,402	33,247
	Bombay	..	5,604	..	1,657	..	..	..	443	135	2,740	..	6,715	..	1,148	..	..	18,307
	ALL INDIA	..	50,156	..	17,403	2,628	1,528	..	1,517	529	3,033	..	8,118	..	5,321	..	..	87,076
1858-59	Bengal	60,043	57,102	21,365	16,930	9,097	3,806	17,281	8,624	21	664	111	23	2,437	1,332	110,555	5,528	88,421
	Madras	2,866	1,466	91	61	..	..	..	..	..	..	3,298	1,575	7,887	3,201	14,142	707	6,303
	Bombay	1,800	1,275	93	46	..	..	..	..	188	3,943	13,101	5,518	1,518	827	16,700	835	11,619
	ALL INDIA	64,709	59,843	21,549	17,037	9,097	3,806	17,281	8,624	209	4,547	16,510	7,116	11,842	5,360	141,397	7,070	106,343
1859-60	Bengal	64,078	47,168	26,979	14,184	13,087	5,054	12,889	6,440	9	186	..	..	21,828	12,087	138,861	6,943	85,116
	Madras	6,675	2,441	3,192	950	158	47	..	..	4	1	1,167	551	6,381	2,490	17,577	879	6,480
	Bombay	4,133	2,730	127	75	..	..	559	333	61	1,290	6,620	4,271	1,281	794	12,781	639	9,493
	ALL INDIA	74,886	52,339	30,289	15,209	13,245	5,101	13,448	6,773	74	1,474	7,787	4,822	29,490	15,371	169,219	8,461	101,089
1860-61	Bengal	50,452	91,706	7,231	10,541	916	861	3,322	3,421	53	18	..	..	1,261	1,158	63,235	6,662	107,765
	Madras	1,630	521	..	..	..	..	..	..	..	..	2,108	722	3,792	1,384	7,530	376	2,657
	Bombay	3,406	1,646	500	250	..	..	525	263	231	4,654	7,453	21,410	873	286	12,988	649	28,509
	ALL INDIA	55,488	93,873	7,731	10,791	916	861	3,847	3,684	284	4,672	9,561	22,132	5,926	2,828	83,753	7,687	138,871

NATIONAL ARCHIVES OF INDIA

Subdivisions II. and III. — DYE STUFFS AND TANNING MATERIALS.

The Table (p. 112) indicates the quantity and value of the dye stuffs, exclusive of Indigo and Munjeet (Indian Madder) exported from 1857 to 1861.

INDIGO.

The importance and value of indigo as an article of Indian export will be gathered from the Table (p. 114).

But few samples of indigo have on this occasion been forwarded from Bengal, its chief seat of manufacture. This deficiency (as far as showing the public here the various qualities of this important dye imported into the London market is concerned) has been supplied by Messrs. AUERBACH & Co., of Mincing Lane.

2450–1. [10584–5] Indigo. Messrs. FISCHER & Co., *Salem.*

2452–3–4. [106, 92*, 94*] Samples of indigo, INDIA MUSEUM.

2455. [10584] Kurpah indigo. W. R. ARBUTHNOT, Esq., *Madras.*

2456. [10623] Kurpah indigo, North Arcot. RAMASHESHIA.

2457. [10011] Kurpah indigo, Hansi. Messrs. JARDINE & Co.

2458–9–60–1–2. [5123–4–5–6–7] Indigoes, Hooghly. H. STEEL, Esq.

2463. [5122] Indigo, Midnapore.

2464. [99*] Indigo, Jessore.

2465. [7109] Wild indigo, Cuttack.

Wild indigo is reported to be found in some parts of the forest jungles of this division, but the Cuttack Committee have been unable to verify the report. The specimen was procured from the state of Bunkee, where a small quantity of indigo is cultivated in a very imperfect manner, the plants being apparently allowed to grow so thickly that they shoot up into long slender reeds instead of developing the leaf. It was tried in a part of the Cuttack district, and proved an entire failure.*

2466. [7363] Indigo, Ulwar. H.H. the MAHARAJAH.

Indigo might be cultivated in Ulwar, but there is a great, though by no means insuperable, disinclination on the part of the people generally against its cultivation, as it is looked upon as 'napak,' unclean. The cost of production is about 2 seers for the rupee. When the railway is completed to Agra, that station will be the nearest connecting link towards Calcutta. A cart occupies five days in going from here to Agra, the cost of which is 8 annas, 12 annas, and 1 rupee a day marching, with half for return hire, according as there are two, three, or four bullocks to each.

2467. [6449] Indigo, Mooltan, Punjab.

2468. [6450] Indigo, Moozuffergurh, do.

Indigo has been manufactured from time immemorial in the districts of Moozuffergurh, Mooltan, and the country west of the river Indus, called the Derajat. It is exported, but not to any great extent, in the direction of Afghanistan. The article, as at present prepared in the Western Punjab, is quite unfitted for the European market, but under proper superintendence it might be produced of the finest quality, and to an almost unlimited extent.*

2469. [1048] Indigo, Jacobabad, Scinde.

2470. [1056] Indigo, Hyderabad, Scinde.

2471. [820] Indigo, Shikarpoor, Scinde.

2472. [4189] Indigo, Penang.

2473. [93*] Indigo. INDIA MUSEUM.

2474. [4163] Indigo, Penang.

SAMPLES OF INDIGO EXHIBITED BY MESSRS. R. AUERBACH AND CO.

2475. [7198] H H; H & Co. Bengal Indigo Company, Khalbolia. Fine purple violet.

2476. [7199] R; J & R W. European make. Deep red violet.

2477. [7200] P & O; B. Do. Hatton Tirhoot. Fine red violet.

2478. [7201] C D & Co. Do. Sericole, Jessore. Good red violet.

2479. [7202] McA & Co: R. Do. Meergunge, Jessore. Dull violet.

2480. [7203] McA & Co. Do.

2481. [7204] G. W. C. Do. Rancore. Good violet and red.

2482. [7205] Moran, European make, Meerpore. Middling violet and red.

2483. [7206] Up country, native make. Ordinary violet.

2484. [7207] R. & H. Up country. Copper red.

2485. [7208] Plant, Oude. Violet.

* Local Committee, *Cuttack.*

* Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF INDIGO EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Other Parts		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850-51	Bengal	6,661,756	1,286,404	1,482,721	285,414	33,558	6,532	393,073	76,260	..	..	317,238	61,718	760	145	8,889,106	3,968	1,716,474
	Madras	2,022,192	235,925	111,384	14,876	..	..	..	..	..	..	..	..	..	..	2,133,576	952	250,801
	Bombay	39,395	3,632	..	..	..	..	..	..	..	..	71,581	9,954	614	35	111,590	50	13,621
	All India	8,723,343	1,525,961	1,594,105	300,290	33,558	6,532	393,073	76,260	..	..	388,819	71,672	1,374	180	11,134,272	4,970	1,980,896
1851-52	Bengal	6,635,848	1,271,813	2,039,142	396,816	138,426	27,801	308,602	59,730	..	..	484,288	63,119	493	95	9,606,799	4,290	1,819,374
	Madras	1,489,831	162,757	181,803	22,838	..	..	..	..	..	..	38	4	1,025	154	1,672,697	747	185,753
	Bombay	67,557	10,134	257	39	..	..	..	..	..	..	66,728	9,963	1,644	50	136,186	61	20,186
	All India	8,193,236	1,444,704	2,221,202	419,693	138,426	27,801	308,602	59,730	..	..	551,054	73,086	3,162	299	11,415,682	5,098	2,025,313
1852-53	Bengal	4,168,183	802,880	2,311,225	454,072	9,952	1,927	441,929	85,503	..	..	232,356	43,653	2,179	120	7,165,824	3,199	1,388,155
	Madras	2,575,701	329,616	372,933	47,715	..	..	..	..	..	..	..	..	..	..	2,948,634	1,317	377,331
	Bombay	29,276	4,391	..	..	..	..	..	..	..	..	267,093	39,545	2,041	263	298,410	133	44,199
	All India	6,773,160	1,136,887	2,684,158	501,787	9,952	1,927	441,929	85,503	..	..	499,449	83,198	4,220	383	10,412,868	4,649	1,809,685
1853-54	Bengal	5,669,328	1,102,602	2,119,376	398,712	35,840	7,012	530,880	77,627	..	..	475,328	97,368	108,864*	20,729*	8,939,616	3,991	1,704,050
	Madras	2,069,927	285,411	186,423	30,313	..	..	7,132	891	..	..	1,212	145	..	..	2,264,694	1,011	316,760
	Bombay	18,265	2,743	196	12	..	..	..	..	..	..	294,555	43,986	2,753	220	315,789	141	46,961
	All India	7,757,540	1,390,756	2,305,995	429,037	35,840	7,012	538,012	78,518	..	..	771,095	141,499	111,617	20,949	11,520,099	5,143	2,067,771
1854-55	Bengal	5,139,008	992,122	1,307,264	277,168	..	..	479,472	92,637	2,016	396	117,936	22,906	225,7[illegible]*	40,919*	7,271,488	3,246	1,426,149
	Madras	1,320,320	209,936	78,966	13,159	..	..	..	..	..	..	..	..	..	..	1,399,286	625	223,095
	Bombay	15,344	2,302	..	..	..	..	..	..	..	..	353,537	49,879	4,721	400	373,602	167	52,581
	All India	6,474,672	1,204,360	1,386,230	290,327	..	..	479,472	92,637	2,016	396	471,473	72,785	230,513	41,319	9,044,376	4,038	1,701,825
1855-56	Bengal	6,003,088	1,127,298	2,835,392	548,882	360,080	70,947	762,720	191,475	..	..	140,448	27,339	5,040	922	10,106,768	4,512	1,966,863
	Madras	2,389,778	351,784	461,052	72,441	..	..	1,321	198	..	..	..	..	562	26	2,852,713	1,273	424,449
	Bombay	30,793	3,954	..	..	..	..	..	..	..	..	235,695	28,769	4,672	297	271,160	121	33,020
	All India	8,423,659	1,483,036	3,296,444	621,323	360,080	70,947	764,041	191,673	..	..	376,143	56,108	10,274	1,245	13,230,641	5,906	2,424,332
1856-57	Bengal	4,703,440	863,407	2,112,656	383,419	82,992	15,145	582,512	106,214	..	..	164,192	29,914	322,112*	58,757*	7,967,904	3,557	1,456,856
	Madras	2,129,876	351,075	521,551	93,736	2,955	443	..	..	..	..	..	..	2,484	181	2,656,866	1,186	445,435
	Bombay	43,895	5,696	..	..	..	..	..	..	..	..	211,458	27,492	17,807*	2,428*	273,160	122	35,616
	All India	6,877,211	1,220,178	2,634,207	477,155	85,947	15,588	582,512	106,214	..	..	375,650	57,406	342,403	61,366	10,897,930	4,865	1,937,907
1857-58	Bengal	5,025,412	986,192	1,005,620	205,130	8,064	1,570	273,028	48,691	..	..	167,300	23,715	163,436*	41,929*	6,642,860	2,966	1,307,227
	Madras	1,488,986	270,166	488,346	95,877	..	..	..	..	..	..	..	..	275	44	1,977,607	883	366,087
	Bombay	77,815	11,102	..	..	..	..	..	..	..	..	422,871	47,511	16,702*	2,411*	517,388	231	61,024
	All India	6,592,213	1,267,460	1,493,966	301,007	8,064	1,570	273,028	48,691	..	..	590,171	71,226	180,413	44,384	9,137,855	4,080	1,734,338
1858-59	Bengal	4,123,336	1,038,909	1,465,660	387,174	59,556	12,584	619,920	172,956	..	..	310,576	61,863	217,308*	41,522*	6,796,356	3,034	1,715,008
	Madras	1,818,759	326,861	144,271	27,333	..	..	..	..	..	..	..	..	2,229	155	1,965,259	877	354,349
	Bombay	88,855	12,183	..	..	..	..	..	..	..	..	336,566	35,137	9,353*	1,340*	434,774	194	48,660
	All India	6,030,950	1,377,953	1,609,931	414,507	59,556	12,584	619,920	172,956	..	..	647,142	97,000	228,890	43,017	9,196,389	4,105	2,118,017
1859-60	Bengal	5,727,624	1,119,185	1,362,676	262,924	16,996	3,313	492,604	94,792	..	..	98,728	19,205	212,492*	40,836*	7,911,120	3,532	1,540,255
	Madras	2,180,233	387,075	339,063	66,520	..	..	..	..	..	..	..	..	1,600	72	2,520,896	1,125	453,667
	Bombay	..	..	..	..	..	..	..	..	..	..	285,031	27,238	1,804	129	286,835	128	27,367
	All India	7,907,857	1,506,260	1,701,739	329,444	16,996	3,313	492,604	94,792	..	..	383,759	46,443	215,896	41,037	10,718,851	4,785	2,021,289
1860-61	Bengal	5,851,328	1,136,652	1,731,184	339,395	31,136	6,048	242,256	46,676	..	..	106,736	20,802	64,400*	12,936*	8,027,040	3,583	1,562,509
	Madras	1,326,027	228,407	225,922	45,315	..	..	..	..	..	..	..	..	3,398	184	1,555,347	694	273,906
	Bombay	6,716	435	15,222	1,028	..	..	..	..	..	..	223,151	48,118	4,227	388	249,316	111	49,961
	All India	7,184,071	1,365,494	1,972,328	385,738	31,136	6,048	242,256	46,676	..	..	329,887	68,920	72,025	13,508	9,831,703	4,388	1,886,376

* The principal portion of this was exported to Suez.

NATIONAL ARCHIVES OF INDIA

2486. [7209] <M> Oude, native make. Lean copper.

2487. [7210] I. C. European factory make, Hirzapore, Jessore. Bengal washing.

2488. [7211] A & Co. Kurpah, European make, deep violet. Kurpah, native make, good red violet. Do. red. Do. coppery red.

2489. [7215] Pondicherry indigo (Kurpah).

2490–1. [7217–18] Madras dry leaf (native make).

2492. [7219] Penang indigo.

2493. [7220] Madras fig indigo.

2494. [7221] Spurious fig indigo, supposed to be made in England.

2495. [7223] H. & S. J. Bengal indigo, European make. Jeetnapore, Kishnaghur. Purple blue.

2496. [7224] Indigo. Do. Do.

2497. [7225] H. & S. J. Bengal indigo, European make. Jeetnapore, Kishnaghur. Deep blue.

The six following excellent samples of indigo (Nos. 2498–2503) are contributed, through W. H. CRAKE, Esq., by Messrs. PARRY & Co., Madras.

2498. [9082] Mark T. Vellore. North Arcot.

2499. [9083] Mark W. Vellore. North Arcot.

2500. [9084] Mark C. Vellore. North Arcot.

2501. [9085] Mark A. Vellore. North Arcot.

2502. [9086] Mark T. D. South Arcot.

2503. [9087] Mark T. G. South Arcot.

2504. [7124] Room dye (*Ruellia* species), Muttock, Assam. W. G. WAGENTRIEBER, Esq.

2505. [7125] Room dye. Do.

2506–7. [6520–1] Cloth dyed therewith, Muttock, Assam. W. G. WAGENTRIEBER, Esq.

This dye, derived from the Assam Room plant, is prepared after the manner of indigo. Specimen 6520 has been steeped twenty-four hours, but not pressed for want of apparatus; 6521 has been prepared in a similar manner, but steeped forty-eight hours. Room grows wild in Assam. No attention is paid to the cultivation. This plant (or a species very nearly allied to it) is cultivated with the same object in Pegu and other parts of the Burmese Empire, a specimen of which is exhibited under the name of *Mai gyee* from Moulmein. It is believed that the Room contains indigo allied to that produced by species of Isatis and Wrightia. The source of this dye has been referred to *Ruellia comosa* Wall.

MADDER.

The *Rubia munjista*, known in the market under the name of 'Munjeet,' furnishes the madder-root exported from India. The following Table (p. 116) shows the extent to which it is so.

2507A. [5277] Madder (*Rubia munjista*), Meere and Duflah Hills. H. L. MICHEL, Esq.

Produced at the Hills occupied by the Meeree and Duflah tribes, North Luckimpore, Assam. Value 1½*d.* per lb.

2508. [5276] Madder. Mishmee and Abor Hills. MAJOR H. S. BIVAR.

Produced at the Hills occupied by the Mishmee and Abor tribes, Suddyah Luckimpore, Upper Assam. Value 1½*d.* per lb.

2509. [9162] Madder. Mishmee Hills. W. G. WAGENTRIEBER, Esq.

2510. [9163] Madder. Durrung. LIEUT. W. PHAIRE.

2511. [9160] Madder. Geipore. J. N. MARTIN, Esq.

2512. [1871] Madder. Calcutta.

2513. [9161] Madder. Nepal. H.H. SIR JUNG BAHADOOR, K.C.B.

2514. [1738] Madder (*Rubia munjista*), Punjab.

2515. [6031] Madder. Bombay.

2516. [5221] Madder (*Rubia tinctoria*), Jullundur. COL. F. C. BURNETT.

Grown from seed imported two years ago from France.

2517. [5329] Chay-root (*Oldenlandia umbellata*), Cuttack.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF MUNJEET EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED												TOTAL EXPORTED TO ALL PARTS		
		UNITED KINGDOM		FRANCE		OTHER PARTS OF EUROPE		AMERICA		ARABIAN AND PERSIAN GULFS		OTHER PARTS				
		Quantity	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850–51	Bengal	32,917	120	412	1	4,362	16	..	..	..	..	..	..	37,691	17	137
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	1,370,320	13,324	..	..	..	..	..	..	896	10	..	..	1,371,216	612	13,334
	ALL INDIA	1,403,237	13,444	412	1	4,362	16	..	..	896	10	..	..	1,408,907	629	13,471
1851–52	Bengal	28,710	104	..	..	..	..	20,295	74	..	..	..	..	49,005	22	178
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	1,172,304	10,467	..	..	..	..	..	..	2,576	23	4,032	36	1,178,912	526	10,516
	ALL INDIA	1,201,014	10,571	..	..	..	..	20,295	74	2,576	23	4,032	36	1,227,917	548	10,694
1852–53	Bengal	128,205	311	..	..	..	..	..	..	..	..	..	..	128,205	57	311
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	3,216,192	28,717	..	..	..	..	..	..	..	..	6,832	62	3,223,024	1,439	28,779
	ALL INDIA	3,344,397	29,028	..	..	..	..	..	..	..	..	6,832	62	3,351,229	1,496	29,090
1853–54	Bengal	42,896	105	..	..	..	..	18,816	46	..	..	..	..	61,712	28	151
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	3,782,576	33,773	..	..	..	..	..	..	..	..	2,912	26	3,785,488	1,690	33,799
	ALL INDIA	3,825,472	33,878	..	..	..	..	18,816	46	..	..	2,912	26	3,847,200	1,718	33,950
1854–55	Bengal	122,304	344	..	..	..	..	..	..	..	..	..	..	122,304	55	344
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	1,621,088	15,094	..	..	..	..	..	..	..	..	..	..	1,621,088	724	15,094
	ALL INDIA	1,743,392	15,438	..	..	..	..	..	..	..	..	..	..	1,743,392	779	15,438
1855–56	Bengal	134,960	493	..	..	..	..	..	..	..	..	1,792	7	136,752	61	500
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	1,635,312	13,141	..	..	..	..	..	..	..	..	3,136	26	1,638,448	731	13,167
	ALL INDIA	1,770,272	13,634	..	..	..	..	..	..	..	..	4,928	33	1,775,200	792	13,667
1856–57	Bengal	187,712	685	..	..	..	..	..	..	..	..	..	..	187,712	84	685
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	4,161,136	33,429	..	..	..	..	..	..	..	..	224	2	4,161,360	1,858	33,431
	ALL INDIA	4,348,848	34,114	..	..	..	..	..	..	..	..	224	2	4,349,072	1,942	34,116
1857–58	Bengal	280,252	1,022	..	..	..	..	..	..	..	..	..	..	280,252	125	1,022
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	4,219,824	35,832	5,478	44	..	..	17,472	151	..	..	2,240	20	4,245,014	1,895	36,047
	ALL INDIA	4,500,076	36,854	5,478	44	..	..	17,472	151	..	..	2,240	20	4,525,266	2,020	37,069
1858–59	Bengal	186,144	679	..	..	..	..	39,984	146	..	..	..	..	226,128	101	825
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	1,672,832	14,936	..	..	..	..	..	..	..	..	..	..	1,672,832	747	14,936
	ALL INDIA	1,858,976	15,615	..	..	..	..	39,984	146	..	..	..	..	1,898,960	848	15,761
1859–60	Bengal	274,820	1,002	..	..	..	..	..	..	..	..	..	..	274,820	123	1,002
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	1,456,896	13,008	336	3	..	..	42,784	382	..	..	336	3	1,500,352	669	13,396
	ALL INDIA	1,731,716	14,010	336	3	..	..	42,784	382	..	..	336	3	1,775,172	792	14,398
1860–61	Bengal	271,824	1,973	..	..	..	..	27,328	186	..	..	..	..	299,152	134	2,159
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	2,353,792	31,032	..	..	..	..	131,936	1,178	..	..	1,127	10	2,486,855	1,110	32,220
	ALL INDIA	2,625,616	33,005	..	..	..	..	159,264	1,364	..	..	1,127	10	2,786,007	1,244	34,379

2518. [76*] Chay-root (*Oldenlandia umbellata*), Cuttack.

Is largely used by the Indian dyer in the south of India. It furnishes a red dye similar to Munjeet. Experiments in this country with the chay-root have hitherto failed, in consequence, it is supposed, of deterioration during the voyage. It is advisable in the case of this and of some other Indian dye stuffs, that the colouring matter should be extracted similarly to indigo before it is exported.

2519. [4013] Muddi chuckay (*Morinda umbellata*), Salem.

2520. [109*] Mungkudu (*M. umbellata*), Java.

2521. [75*] Mungkudu (*M. umbellata*), Malacca.

The tree producing this dye-stuff grows freely everywhere in India, and no particular care is required in gathering it. The best dye is procured from the bark of the roots of plants three years old. It is one of the commonest red dyes of India, though the colour is dull, yet it is considered faster than the brighter tints obtained from other substances.

2522–3–4. [6461–2–3] Al root (*Morinda citrifolia*), first, second, and third qualities, Banda District. H. W. DASHWOOD, Esq.

2525. [1950] Al root (*Morinda citrifolia*), Jhansee.

NATIONAL ARCHIVES OF INDIA

2526. [5800] Al root, Burmah.

2527–8. [7501–2] Al root, Dharwar.

The bark and root of this *Morinda* is used in the same manner as the last. Most of the Madras red turbans are dyed with this substance, which is very common in that presidency. It yields three different permanent shades — a bright red, a pink red, and a faint red.

MR. DASHWOOD adds the following note:—

The Al root is cultivated in the Banda Purgunnah of this district at the villages of Kupsa, Muttound, Khunna, &c.: the whole extent of cultivation is only about 400 beegahs. The Humeerpore district is the great producing country for al, probably from there being greater facilities for irrigation than in this district. The plants come to maturity in three years. The roots are then dug up and sorted into three kinds, according to the fineness of the fibres. The fibres are then cut and beaten down well, and then ground to powder, which latter is used for the dye. The proportion of prepared fibre is equal to the raw material. The uses to which it is applied are dyeing a red colour, as a remedy for tooth-ache, as well as for sprains of horses. The cost of the prepared fibre is 1 rupee per maund. It is transported on carts, horses, and bullocks to Banda and Rajapore for export to other parts of India, and the cost of transport is about 8 annas per maund.

2529. [9371] Mug dye, Chittagong.

This plant grows wild in the southern part of this district. The Mugs make yellow and red dye, by grinding the plant and its roots into powder, and boiling the same in water. The colours are dull, but seem to last for a long time.*

2530. [6021] Indian Alkanet, Havapiva (*Onosma* species), Bombay.

Several species of *Onosma* are employed as substitutes for the true alkanet, of which this appears to be the produce of one.

2531–2. [1806-7] Alkanet (*Anchusa tinctoria*), Punjab.

This is probably the true alkanet root.

2533. [4798] Turmeric (*Curcuma longa*), Burmah. Messrs. HALLIDAY, FOX & Co.

2534. [7114] Turmeric, Cuttack.

2535. [2852] Turmeric, Raepore.

2536. [6024] Turmeric, Bombay.

2537. [7504] Turmeric, Dharwar.

The powder of the rhizome of this plant is much used in India for dyeing.

2538. [84*] Pupli chuckay (*Ventilago Maderaspatana*).

2539. [7506] Pupli chuckay, Dharwar.

2540. [7510] Pupli chuckay, powdered, Dharwar.

The bark of the pupli root is used in Mysore and elsewhere, as yielding an orange dye. It is treated with alum, myrabolans, &c. This dye stuff is in very common use in India, and deserves a fair trial in this country. The pupli is seldom used alone, but generally as an adjunct, with chay root, to produce a rich chocolate colour, or, if with galls, a black.

2541. [6169] Jack wood (*Artocarpus integrifolia*), Akyab.

Used for dyeing phoongie (priests) clothes with yellow orange colour; 5,000 maunds procurable, but more can be had if required. Price 5 rupees per maund.*

2542. [81*] Kayu Lakah (*Tanarius major*, Rumph.), Singapore.

This is a Malayan red wood. It is heavy and compact, somewhat resembling red sanders wood, but, when powdered, the colour is browner, and not so brilliant.

2543. [82*] Kayu Laxka, Singapore.

This is a red dye wood, so closely resembling the *Kayu lakah* that it may be the produce of the same tree. Either of the above woods seem to be applicable to the same purposes as red sanders.

2544. [9372] Oak bark (*Quercus* species), Chittagong.

There are a great number of oak trees in the jungles in this district, both in the low lands and hills, particularly the latter. It is used for tanning as well as for firewood.

2545. [4015] Turwar (*Cassia auriculata*), Salem. H. A. BRETT, Esq.

2546. [4953] Turwar, Madras. DR. SHORTT.

This bark is employed both in tanning and dyeing, and has been of late imported on two or three occasions into this country.

2547. [6170] Cassia fistula bark (*Cathartocarpus fistula*), Cuttack.

The bark of the *Cassia fistula*, locally *Soona Rea Chali*, is used in tanning leather. The tree is abundant in the jungles of the Tributary Mehals.†

2548. [77*] Kuephul (*Myrica sapida*), Rohilkund.

Used for dyeing yellow.

2549. [23*] Samak or Sumach (*Cæsalpinia coriaria*), or Divi-divi bark, Singapore.

This bark is used both as a tanning material and as a dye-stuff.

* Local Committee, *Chittagong.*

* Local Committee, *Akyab.*

† Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

2550. [7106] Lodh bark (*Symplocos racemosa*), Cuttack.

2551. [2844] Lodh bark, Raepore.

This bark is employed in dyeing yellow, and also sometimes as a mordant for other dyes.

2552. [15*] Garan-chal (*Ceriops Roxburghianus*).

The bark is used in India for dyeing, chiefly in the Presidency of Bengal.

2553. [21*] Sagah bark, Singapore.

This bark resembles mangrove bark in appearance, and is employed as a dyeing material.

2554. [24*] Mangrove bark (*Rhizophora mangle*), Singapore.

2555. [6708] Mangrove bark, Singapore. G. ANGUS, Esq.

2556. [4101] Mangrove bark, Penang.

It is used in Arracan as the source of a chocolate colour. This substance can be readily enough obtained if found valuable to the home dyer, as it is often imported for tanning.

2557. [4100] Tengah (*Rhizophora* species), Penang.

It is allied to the mangrove, and is extensively exported to China as a tanning substance, being plentiful on the river banks and coast of the province. Used locally as a dye, a decoction of it produces a deep black in material previously dyed blue.*

2558. [3809] Babool bark (*Acacia arabica*), Jhansee.

2559. [22*] Babool bark. INDIA MUSEUM.

A valuable tanning bark, sometimes also employed in dyeing.

2560. [20*] Jamoon (*Eugenia jambolana*).

This bark is chiefly employed for tanning.

2561. [40*] Trap bark (*Artocarpus* species).

2562. [78*] Thenaka bark, Tenasserim.

2563. [6023] Rusot extract (*Berberis lycium* and *Berberis aristata*), Bombay.

Furnishes a yellow dye. A similar dye is obtained in the Neilgherries from *Berberis asiatica*.

2564. [6009] Mara Manjil, Woniwol or Bangwellgetta (*Menispermum fenestratum*), Bombay.

Furnishes a yellow dye.

* Local Committee, *Penang.*

2565. [9373] Bukkum chips (*Cæsalpinia sappan*), Calcutta. KANNY LOLL DEY.

2566. [7104] Bukkum chips, Cuttack.

2567. [31*] Bukkum chips, Madras.

2568. [79*] Sapan wood (*C. sappan*), Singapore.

2569–70. [5269–70] Bukkum or Sapan, Assam.

A large quantity of *Sapan* or *Bukkum* wood is grown in Malabar. The wood of the trunk, and also of the root, are rendered available.

The wood of *Cæsalpinia pulicata* is also employed in the East Indies as a dye stuff. There is every probability of its becoming an established article of British commerce.

2571. [80] Kayu Kudrang, Singapore.

A yellow dye wood; source undetermined.

2572. [86*] Woodunpar, Upper Assam.

2573. [6172] Kabine (dye tree bark), Akyab.

Used to colour fishing nets a red brown; 10,000 maunds could be obtained. Price 6 rupees per maund.*

2574. [6168] Rairo (Dye tree bark), Akyab.

This gives a yellow colour; with oil and plantain ash a red colour is made. Price 6 rupees per maund.†

2575. [1786] Ekalbir (*Datisca cannabina*), Punjab.

2576. [1787] Ukkulbeer (*D. cannabina*), Punjab.

The bark and woody portions of the root have long been known and used as a yellow dye in Cashmere. It is in great esteem for dyeing silks.

2577. [6171] Thit-na-myeng, Akyab.

Thread is coloured yellow by it; and when oil and sealing-wax are added, a red colour is obtained; 1,000 maunds might be obtained. Price 8 rupees per maund.‡

2578. [6559] Gutteah, Chittagong.

Another tanning substance. It is a bush that grows on the sides of creeks and rivers, in low ground, which is inundated with the spring tide. It is cut for firewood, and the fishermen and shoemakers purchase it, and take the bark off to lay their fishing nets and leather, and afterwards sell the wood posts for firewood. It is very abundant at Chittagong.

2579. [18*] Bark of *Gmelina arborea*, Bengal.

* Local Committee, *Akyab.*
† Local Committee, *Akyab.*
‡ Local Committee, *Akyab.*

NATIONAL ARCHIVES OF INDIA

NEW DYE STUFFS EXHIBITED BY DR. R. F. THOMPSON, MALDA.

2580. [2191] Vegetable green dye and cloth.

2581. [2194] Vegetable green dye (1).

2582. [6645] Vegetable green dye, in a liquid state.

2583. [2153] Dried cloth from the green dye, without mordants (2).

2584. [2152] Do. passed through a dilute sulphuric acid (3).

2585. [2158] Cake of green dye (4).

2586. [2156] Cloth dyed from the cake of green dye with acetate of copper (5).

2587. [2165] Cloth dyed from cake of green dye (6).

2588. [2157] Cloth dyed from leaves of green dye (7).

2589. [2163] Leaves of green dye dried in the oven (8).

2590. [2159] Do. in powder (9).

2591. [2165] Dyed cloth from dried leaves of green dye (10).

2592. [2164] Cloth boiled in solution of leaves of the green dye (11).

2593. [2147] Yellow dye in cake.

2594–95. [2161–2164] Yellow dye in powder.

2596–97. [2154–2168] Cloth dyed with yellow dye.

DR. THOMPSON supplies the following note:—

This yellow dye is from the petals of a flower which gives out the dye largely, and which at once attaches itself to cloth permanently, without mordants. It can be had abundantly, and collected with greater facility than safflower.

Dissolve and boil in hot water, then dip the cloth or silk into it.

Nos. 2154 and 2168 have been dyed with it.

If these green and yellow dyes are approved of, India will be able to supply annually a very large quantity.

2598. [63*] Casan leaves (*Memecylon tinctorium*), Madras.

A small tree, common in the jungles of the Carnatic, the wood of which is used for firewood, and the leaves brought into the markets in large quantities for dyeing purposes. A cold infusion of the leaves yields a yellow dye. Crimson dye is also said to be obtained from them.

2599. [4017] Vattangee (*Cæsalpinia Sapan?*), Salem. H. A. BRETT, Esq.

2600. [20*] Leaves of *Dicalyx tinctoria*.

The powdered leaves of *Dicalyx tinctoria* are employed at Mirzapore and elsewhere for dyeing red.

2601. [6027] Hunsraj (*Adiantum lunulatum*), Bombay.

2602. [7101] Mai Gyee (*Reuellia* species), Moulmein.

The leaves of this plant are boiled in water, when the decoction gives a blue colour to cloth &c., inferior to indigo.*

2603. [4963] Henna (*Lawsonia alba*), Chingleput. DR. SHORTT.

The leaves of this plant beaten up into a soft mass with conjee water are applied to the nails, finger ends, palms and soles of the feet over night: on being washed out the next morning these parts are found stained a deep red colour. The men use it to stain their moustaches and beards, and for dyeing the manes and tails of their horses. It is also used as an ordinary dye stuff. A decoction of the leaves is used in lepra, &c. The flowers when distilled are used as a perfume.

2604. [49] Safflower (*Carthamus tinctorius*), Celebes.

2605. [7105] Safflower, Cuttack.

This article is sent down from Sumbulpore. It yields a bright handsome colour. The wholesale price per maund of 100 lbs. English is about 8 rupees or 16*s.*†

2606. [6602] Safflower, Hooghly.

2607. [6459] Safflower (*C. tinctorius*), Allahabad.

2608. [2848] Safflower, Raepore.

2609. [45] Safflower, Deccan.

2610. [6013] Safflower, Ahmedabad.

2611. [48] Safflower, Assam.

2612. [7907] Cake Safflower, Dacca. Messrs. AUERBACH & Co.

2613. [7908] Safflower, Dacca. Messrs. AUERBACH & Co.

2614–15. [7507–8] Safflower, Dharwar.

2616. [58*] Godari flowers (*Grislea tomentosa*).

The red flowers and leaves are used for dyeing purposes. In the Northern Circars, where it is known under

---

* Local Committee, *Moulmein.*

† Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

the name of *Godari*, the leaves are employed in dyeing leather. Sheep-skins, steeped in an infusion of the dried leaves, become a fine red, of which native slippers are made. The dried flowers are employed in Northern India, under the name of *Dhauri*, in dyeing with Morinda bark; but perhaps more for their astringent than for their tinctorial properties. DR. GIBSON states that in Kandeish the flowers form a considerable article of commerce inland as a dye. It grows abundantly in the hilly tracts of the Northern Circars.

2617. [6206] Goolanna (*Punica granatum*), Calcutta.

2618. [7031] Saffron (*Crocus cashmerianus*), Cashmere.

This well-known substance, scarcely important as a dye-stuff, is produced in the vale of Cashmere, from an indigenous species of *Crocus*.

2619. [65*] Siamese dye stuff.

2620. [66*] Burmese dye flowers.

2621. [6008] Tisso flowers (*Butea frondosa*), Bombay.

2622. [7107] Tisso flowers, Cuttack.

These flowers, and probably also those of *Butea superba*, are used as a yellow dye in India. 16 seers per rupee.

2623. [7110] Hursinghar flowers (*Nyctanthes arbor tristis*), Calcutta.

2624. [4891] Hursinghar flowers, Chingleput. DR. SHORTT.

These flowers are used for dyeing yellow or orange.

2625. [4958] Shoe flower (*Hibiscus rosa sinensis*), Chingleput. DR. SHORTT.

The flowers are of a rich scarlet colour, and yield a purple juice. They are employed for dyeing a lilac colour, and for blackening leather. DR. SHORTT adds, that he has frequently used an infusion of the shoe flower for preparing litmus, and found it to answer admirably.

2626. [7108] Kamala powder (*Rottlera tinctoria*), Cuttack.

2627. [1862] Kamala powder, Punjab.

2628. [51] Capila rung.

2629. [83] Capela podi.

2630. [4016] Kapila podi, Salem. H. A. BRETT, Esq.

2631. [7509] Kamala, Dharwar.

Used for dyeing silk an orange colour. This powder consists of the stellate pubescence shaken from the surface of the fruit capsules of the *Rottlera tinctoria*, a large tree widely spread over many parts of the country. It is worthy of extended attention.

2632. [1246] Suringee (*Calysaccion longifolium*), Bombay.

The flower buds of this plant, a portion of which is figured below (*see opposite page*) are collected and employed for dyeing silk.

2633–34. [7111–6022] Daleemka kola, or pomegranate rind (*Punica granatum*), Ahmedabad.

2635. [3439] Mangosteen rind (*Garcinia mangostana*), Calcutta. KANNY LOLL DEY.

The coat or rind of the fruit of the mangosteen, and the bark of the Katapping or wild almond (*Terminalia catappa*), are used for dyeing black.

2636. [73*] Munjulde (*Terminalia chebula*), Assam.

Appears to be the fruit collected and dried before it is ripe. Under the name of Munjulde it is known in Assam, where it is employed in dyeing.

2637. [6041] Haridah (*T. chebula*), Ahmedabad.

2638. [6605] Haridah, Calcutta.

2639. [6019] Heerda (*T. chebula*), Bombay.

2640. [6030] Bherda (*T. chebula*), Do.

2641. [2842] Bherda, Raepore.

2642. [1817] Bherda, Punjab.

2643. [6486] Bohara (*T. belerica*).

2644. [2836] Bahara, Raepore.

2645. [9376] Humtokee, Bombay.

2646. [6486] Haritoke, Calcutta.

2647. [2843] *Terminalia angustifolia*, Raepore.

These three kinds of Myrabolans yield, with alum, a good durable yellow, and with salts of iron, a black colour. They are in very common use in India, and have been so from time immemorial. It is not long since they were introduced into Great Britain for tanning purposes, and now a large quantity is annually imported.

2648. [9377] Aomla (*Phyllanthus emblica*), Bombay.

2649. [2845] Owlah (*P. emblica*), Raepore.

2650. [7102] Owlah, Cuttack.

2651. [4945] Owlah, Madras. DR. SHORTT.

2652. [6604] Bhellawa nuts (*Semecarpus anacardium*), Calcutta.

NATIONAL ARCHIVES OF INDIA

2653. [4019] Bhela nuts (*S. anacardium*), Madras. MR. R. BROWN.

The common marking nuts are thus designated. The juice is black, and is employed not only as a medium, but especially for marking all kinds of cotton cloth.

2654. [70*] Gaub fruits (*Diospyros glutinosa*).

2655. [6560] Tari (*Cæsalpinia* species), Chittagong.

It is the pod of a leguminous plant, which grows abundantly in the Hills, and is useful for tanning.

2656. [6571] Oom Tari (*Nipa fruticans*), Chittagong.

Is the produce of a palm which grows in this district, and is susceptible of the same as an ordinary tari.

2657. [6036] Amlee (*Tamarindus* species), Ahmedabad.

LICHENS.

2657A. [36*] Burmese Orchil (*Roccella phycopsis*), Burmah.

Probably equal in value to the ordinary *R. tinctoria* of commerce.

2658. [1815] Chulcheleera, Punjab.

2659. [34*] Chulcheleera, Punjab. INDIAN MUSEUM.

A mixture of dye lichens employed for dyeing, contains *Parmelia Kamtschadalis, Parmelia perlata*, and its variety *sorediata, Usnea florida, Ramalina calicaris*, and fragments of *Physica leucomela*. In this mixture the first-named species constitutes the greatest proportion.*

SURINGEE (*Calysaccion longifolium*).†

TANNING SUBSTANCES.

Some of these have been already incidentally referred to, but as the following are distinct of their kind, they are better enumerated together:—

2660. [1812] Kakrasinghee galls on *Rhus kakrasinghee*, Kangra.

These galls are procured only in small quantities, and are not yet articles of commerce beyond the confines of India.

2661. [6015] Gool-i-pista, Bombay.

2662. [7507] Gool-i-pista, Dharwar.

These galls are produced on the Pistachio (*Pistacia vera*), and are brought down from the North.

2663. [7503] Galls of *Terminalia chebula*, Dharwar.

* M. C. COOKE, Esq.
† Received from *Pharmaceutical Journal.*

NATIONAL ARCHIVES OF INDIA

2664. [6032] Cadooca Poo (*Terminalia* species), Bombay.

2665. [6451] Mani dye, galls of *Tamarix furas*, Jhung district.

2666. [6006] Burree-mue, galls of *T. indica*, Bombay.

2667. [9378] Chotee, galls of *T. furas*, Bombay.

2668. [6020] Chotee-mue, galls of *T. furas*, Bombay.

The Tamarisk galls are exported in small quantities, and are occasionally found in the British market.

2669. [6018] Maaphul, galls of *Quercus infectoria*, Bombay.

2670. [11*] Galls of *Q. infectoria*. INDIAN MUSEUM.

2671. [7103] Galls of *Quercus infectoria*, Calcutta.

These galls are exported, and are ordinarily to be met with in commerce.

2672. [15] Asaucum (*Terminalia tomentosa*).

An astringent extract somewhat of the nature of kino applicable for tanning and dyeing.

2673. [18] Dhak gond (*Butea frondosa*), North-west India.

The kino of the Pulas tree.

2674. [6601] Dhak gum (*B. frondosa*), Lucknow.

2675. [13] Pelachy extract.

The astringent extract of *Butea superba*, similar in properties and uses to kino.

2676. [16*] Kino (*Pterocarpus marsupium*), Malabar.

The concrete exudation of the *Pterocarpus marsupium*.

2677. [6017] Moocherus (*Bombax heptaphyllum*), Bombay.

The astringent gum of the silk cotton tree, which is employed for tanning.

2678. [6681] Gambir (*Nauclea gambir*), Singapore. G. ANGUS, Esq.

2679. [6662] Gambir, Singapore. JOSE D'ALMEIDA, Esq.

2680. [6704] Yellow gambir, Rhio. G. ANGUS, Esq.

2681. [6665] Gambir, Do. Do.

Gambir is the Malay name for *Terra japonica*.

2682. [6039] Cutch or Catechu (*Acacia catechu*), Bombay.

2683. [5341] Cutch, Cuttack.

2684–5. [5397–8] Cutch, Shahabad. R. W. BINGHAM, Esq.

2686–7. [6204–11] Cutch, Calcutta.

2688. [5317] Cutch, Rangoon.

2689. [3332] Ava Cutch, Rangoon. Messrs. HALLIDAY, FOX & Co.

2690. [4763] Cutch, Burmah. Messrs. HALLIDAY, FOX & Co.

2691. [6028] Cutch (*Areca catechu*), Bombay.

2692. [36*] Cake catechu (*do.*), Calcutta.

Subdivision IV. — FIBROUS SUBSTANCES, INCLUDING MATERIALS FOR CORDAGE AND CLOTHING.

COTTON.

A very large and interesting collection has been forwarded. The arrangement requires but little explanation. The cottons are not placed according to the importance of the district, in relation to its exports up to the present time, but geographically, beginning with those from Bengal. A distinct statement is made as to whether the sample is grown from native or foreign seed.

The cotton has been priced both by the Jury* and by the Commissioner† appointed by the COTTON SUPPLY ASSOCIATION. In fixing the price "ordinary" New Orleans cotton at 13*d.* per lb. has been adopted as the standard. Various details will be found condensed in the tabular synopsis commencing at p. 134, whilst the Table which now follows (p. 123) exhibits the exports of cotton from each Presidency for ten years.

Cotton from Cuttack and Sumbulpore.

2693. [121] Kupass and bolls, Piplee. REV. G. TAYLOR.

N.B.—The native term 'Kupass' is applied to every sample of uncleaned cotton.

---

* For Jury, by THOMAS BAZLEY, Esq., M.P.
† W. WANKLYN, Esq.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE* OF COTTON EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61 INCLUSIVE.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		North America		China		Arabian and Persian Gulfs		Islands and Shores of the Indian Seas		All other Places		Total Exported to all Places.		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	Tons	£
1850–51	Bengal	985,026	12,010	2,497,850	30,869	60,042	730	..	..	18,248,478	221,865	..	..	1,290,009	15,684	49,761	605	23,131,166	10,326	281,263
	Madras	9,037,889	116,342	255,900	3,837	..	..	..	..	9,155,350	117,349	2,216	27	299,400	3,267	687,765	9,683	19,438,520	8,678	250,505
	Bombay	131,423,883	1,931,366	496,941	38,128	..	..	..	..	49,646,801	821,150	331,008	4,697	1,868,723	145,842	136,641	1,838	183,903,997	82,100	2,948,021
	All India	141,446,798	2,059,718	3,250,691	72,334	60,042	730	..	..	77,050,629	1,160,364	333,224	4,724	3,458,132	164,793	874,167	12,126	226,473,683	101,104	3,474,789
1851–52	Bengal	642,537	7,812	47,952	583	..	..	..	..	38,151,251	463,840	..	..	1,909,269	23,214	8,143	88	40,759,152	18,196	495,537
	Madras	4,632,380	61,540	48,000	571	..	..	..	..	10,737,153	135,706	26,322	213	1,568,800	17,873	368,864	5,209	17,381,519	7,760	221,112
	Bombay	75,829,306	1,101,928	..	..	..	..	..	..	111,829,247	1,692,381	953,433	11,232	6,571,359	95,023	228,815	2,776	195,412,160	87,237	2,903,340
	All India	81,104,223	1,171,280	95,952	1,154	..	..	..	..	160,717,651	2,291,927	979,755	11,445	10,049,428	136,110	605,822	8,073	253,552,831	113,193	3,619,989
1852–53	Bengal	6,853,728	83,328	..	..	131,928	1,604	..	..	24,848,383	302,108	14,969	182	1,635,130	19,880	..	..	33,484,138	14,948	407,102
	Madras	16,575,197	191,872	..	..	..	..	34,944	687	13,026,102	164,528	56,602	577	796,575	9,723	1,269,827	17,789	31,759,247	14,178	385,176
	Bombay	157,932,069	2,249,986	..	..	..	..	..	..	37,797,257	559,808	1,121,918	14,819	717,420	11,516	96,124	1,087	197,664,788	88,243	2,837,216
	All India	181,360,994	2,525,186	..	..	131,928	1,604	34,944	687	75,671,742	1,026,444	1,193,489	15,578	3,149,125	41,119	1,365,951	18,876	262,908,173	117,369	3,629,494
1853–54	Bengal	2,065,056	25,153	..	..	350,448	4,257	..	..	11,663,904	140,036	..	..	..	..	16,800	204	14,096,208	6,293	169,650
	Madras	8,721,984	113,999	..	..	97,360	2,002	..	..	2,480,400	34,726	66,428	631	146,100	1,746	694,744	9,635	12,207,016	5,450	162,739
	Bombay	127,396,389	1,808,625	598,288	6,440	..	..	..	..	41,632,704	633,809	1,357,540	14,908	246,288	3,286	227,332	2,692	171,458,541	76,544	2,469,760
	All India	138,183,429	1,947,777	598,288	6,440	447,808	6,259	..	..	55,777,008	808,571	1,423,968	15,539	392,388	5,032	938,876	12,531	197,761,765	88,287	2,802,149
1854–55	Bengal	59,136	730	..	..	..	..	..	..	7,436,128	90,489	..	..	134,512	1,636	1,456	18	7,631,232	3,407	92,873
	Madras	8,006,035	104,491	32,400	666	..	..	..	..	1,711,500	23,961	25,439	229	2,066,500	25,194	1,084,639	14,949	12,926,513	5,771	169,490
	Bombay	111,448,366	1,578,923	224,140	3,257	904,120	9,625	..	..	36,746,295	524,694	1,051,534	10,858	2,256,308	31,819	591,684	7,227	153,222,447	68,403	2,166,403
	All India	119,513,537	1,684,144	256,540	3,923	904,120	9,625	..	..	45,893,923	639,144	1,076,973	11,087	4,457,320	58,649	1,677,779	22,194	173,780,192	77,581	2,428,766
1855–56	Bengal	598,192	7,270	..	..	896	10	..	..	12,372,080	150,357	..	..	22	1	42,280	477	13,013,470	5,809	158,115
	Madras	4,792,388	58,900	1,800	37	..	..	..	..	54,000	600	1,148	12	1,052,032	12,204	1,248,196	17,608	7,149,564	3,192	89,361
	Bombay	165,380,930	2,320,454	736,172	9,584	1,497,048	19,079	..	..	44,265,032	651,468	401,240	3,203	4,638,355	62,482	103,138	1,205	217,016,915	96,883	3,067,475
	All India	170,771,510	2,386,624	737,972	9,621	1,497,944	19,089	..	..	56,691,112	802,425	402,388	3,215	5,685,409	74,687	1,393,614	19,290	237,179,949	105,884	3,314,951
1856–57	Bengal	3,434,928	41,744	63,728	775	508,592	6,158	..	..	12,610,864	153,260	..	..	605,696	7,361	3,024	36	17,226,832	7,690	209,334
	Madras	19,597,302	261,080	5,999	72	309,000	4,223	..	..	1,003,200	14,045	410	8	232,799	3,268	2,404,636	33,666	23,553,346	10,515	316,362
	Bombay	230,377,806	3,189,377	1,803,984	23,581	10,698,416	138,107	..	..	35,170,497	548,547	192,726	2,533	574,196	9,326	55,721	782	278,873,346	124,497	3,912,253
	All India	253,410,036	3,492,201	1,873,711	24,428	11,516,008	148,488	..	..	48,784,561	715,852	193,136	2,541	1,412,691	19,955	2,463,381	34,484	319,653,524	142,702	4,437,949
1857–58	Bengal	164,948	1,950	29,988	365	..	..	..	..	635,488	7,723	..	..	106,944	1,291	2,996	36	940,364	420	11,365
	Madras	11,699,984	161,148	4,260,594	58,520	1,527,500	21,306	..	..	651,600	9,122	..	..	151,200	2,309	1,928,667	27,002	20,219,545	9,027	279,407
	Bombay	185,356,315	3,133,600	9,853,292	133,501	18,175,090	260,336	13,888	405	19,237,031	376,647	537,211	7,842	5,738,292	94,930	283,024	3,735	239,194,143	106,783	4,010,996
	All India	197,221,247	3,296,698	14,143,874	192,386	19,702,590	281,642	13,888	405	20,524,119	393,492	537,211	7,842	5,996,436	98,530	2,214,687	30,773	260,354,052	116,230	4,301,768
1858–59	Bengal	296,386	3,602	..	..	..	..	..	..	30,268	500	..	..	..	..	25,550	140	352,204	157	4,242
	Madras	6,432,353	90,694	2,386,500	33,411	..	..	..	..	3,596,400	50,350	1,894	31	..	..	1,635,128	22,893	14,052,275	6,273	197,379
	Bombay	157,289,419	2,986,431	41,524	876	3,945,480	53,945	..	..	38,607,749	783,956	617,743	10,121	..	..	2,955,178	57,150	203,457,093	90,829	3,892,479
	All India	164,018,158	3,080,727	2,428,024	34,287	3,945,480	53,945	..	..	42,234,417	834,806	619,637	10,152	..	..	4,615,856	80,183	217,861,572	97,259	4,094,100
1859–60	Bengal	223,468	2,444	..	..	..	..	..	..	5,448,716	59,596	..	..	..	..	376,860	4,235	6,049,044	2,700	66,275
	Madras	16,662,840	236,320	1,543,044	21,413	785,509	11,004	..	..	1,120,516	29,303	..	..	..	..	1,000,841	14,397	21,112,750	9,425	312,437
	Bombay	241,193,027	3,650,395	944,914	15,251	9,365,004	144,860	866,712	11,150	58,152,248	1,270,333	501,690	9,201	..	..	7,768,180	157,722	318,791,775	142,318	5,258,912
	All India	358,079,335	3,889,159	2,487,958	36,664	10,150,513	155,864	866,712	11,150	64,721,480	1,359,232	501,690	9,201	..	..	9,145,881	176,354	345,953,569	154,443	5,637,624
1860–61	Bengal†	..	55	..	..	..	79	..	93	..	71,359	..	..	..	..	..	2,645	..	..	74,231
	Madras	13,771,236	186,000	1,036,212	11,211	..	..	..	..	5,792,215	80,884	..	..	..	..	1,056,444	14,811	21,656,107	9,668	292,906
	Bombay	279,271,662	5,360,477	1,429,288	28,357	3,951,752	58,246	..	..	66,144,785	1,443,873	588,056	9,866	..	..	3,602,256	71,906	354,987,799	158,477	6,972,725
	All India	..	5,546,532	..	39,568	..	58,325	..	93	..	1,596,116	..	9,866	..	..	..	89,362	..	..	7,339,862

* The Indian rupee is here converted at the exchange of two shillings.
† Returns of cotton from Bengal for 1861 not yet to hand.

NATIONAL ARCHIVES OF INDIA

2694. [125] Clean cotton, Piplee. REV. G. TAYLOR.

Both this and the preceding sample are from New Orleans seed.

2695–6. [82–3] Cotton bolls, Cuttack.

Both yellow and white upland.

2697. [102] Clean, Cuttack.

Yellow lowland cotton.

2698. [122] Kupass, Cuttack.

Yellow upland cotton.

2699. [11] Kupass, Cuttack.

Yellow lowland cotton.

2700. [119] Clean cotton, Cuttack. GOPUL PATUR.

Yellow lowland cotton.

2701. [123] Kupass, Autgar, Cuttack.

Yellow and white upland cotton.

2702. [120] Clean cotton, Dhenkanal.

Yellow upland cotton.

2703. [126] Clean cotton, Dhenkanal.

White upland cotton.

2704–5. [103-4] Clean cotton, Sumbulpore.

2706. [124] Kupass, Sumbulpore.

Upland cotton.

The following remarks on the cottons of the above district are by MR. W. C. LACEY, Secretary to the CUTTACK COMMITTEE :—

The first sample of the raw material was presented to the Committee of Cuttack by the REV. GEO. TAYLOR, of Piplee, a missionary in connection with the General Baptist Mission Society, who has for some time persevered in an experiment on a small scale to grow, and thus encouraged others to grow, this useful staple. His plants are reared from American New Orleans seed, and yield, as calculated on his data, at the rate of 300 lbs. per English acre, at an outlay of about 21*s.* per acre. On a light sandy soil the plants require manure and irrigation only in the hot months, or from March to June. The others are specimens of the good cotton grown in Sumbulpore, from which district a quantity of cotton is annually brought down the Mahanuddy.

In settled parts, the crop is for the most part a stunted, weakly, annual one, frequently grown in the same beds with other crops, and therefore yielding a poor return. More cotton is raised in the Sumbulpore district comparatively than elsewhere in the province, and three-fourths of the produce is said to be exported to Cuttack and Calcutta.

The varieties from Dhenkanal may be described as two highland or upland varieties; the one called the Daloona—a name given probably because the plants throw out numerous branches and grow to a great height, some specimens being 12 feet;—the second kind of upland is what is called the yellow, from the colour of the flowers;—the flower of the Daloona being white. The third variety may be called the lowland, and is known locally as the 'Keda.' They would all appear to be indigenous.

The upland varieties, which are most extensively cultivated, are grown more or less all over the Hill States, and, in short, wherever the single condition of a virgin forest soil exists. They are grown generally in the Sumbulpore district and its dependencies, throughout the Tributary States, and share the cultivation with the overland variety in Dhenkanal and Khoordah. In different localities there are variations in the mode adopted in regard to the sowing of the seed and the after-tending of the plants, But, as a rule, the trouble taken with the crop is almost nominal, the vigour and richness of the new soil being looked to to compensate for the absence of these auxiliary efforts of the planter, which are absolutely necessary in the case of the lowland cotton on soil which every year is called on to yield one or two crops of one kind or another.

The ground selected for the cultivation of uplands is then, in the first instance, a patch of jungle. The site is elevated; the soil may be a dark-looking mould, a light clay, or a loose reddish gravelly one. The jungle is cut down, all the brushwood cleared, heaped, and burnt on the spot. But much trouble is not taken in the clearing, and the stems and roots of the larger trees are left in the ground. The ground thus cleared then receives a superficial ploughing and is weeded; at all events this is the case in Sumbulpore, in Khoordah, and Dhenkanal generally, so that the plants shoot and grow and arrive at maturity through the rainy months.

In Sumbulpore a selection is made from the following seeds, dwarf paddy, Sooa, *Panicum italicum*, *Eleusine corocana*, Bajra, a species of pulse, castor oil, melons, pumpkins, and others. Two, three, or more of these kinds of seed are, with the cotton seed, scattered broad-cast over the ground which has been prepared as before described. No artificial irrigation is of course applied. The edible seed crops spring up and mature rapidly, and in the third or fourth month are ripe, and gathered successively as they ripen. After they have been taken off the ground, say the castor-oil plants and the cotton remain. These then receive a little attention; the ground is weeded and turned about, and the luxuriant masses of light green foliage, which every stump in the clearance has meantime put forth, are all cut away. After this the two crops thrive rapidly together. In January and February the cotton plants yield the first picking, and a month after, the castor-oil seed is ripe, and the plants are plucked and removed, leaving the cotton alone. If the variety of cotton be the Daloona or tall cotton, the plants last for two or even three years, and yield three pickings annually, and reach a height of 9, 10, 11, or even 12 feet. With the yellow upland, it is not so generally the practice of sowing many other crops. In Khoordah, for example, it is principally cultivated to the exclusion, to a certain extent, of the taller white flower cotton. Its yield is considered more abundant, the plants average a height of 6 and 7 feet, but are treated as annuals, and except when cultivated along with the white, in the newest soil and in cool sheltered positions, die off, or are abandoned after the first year.

The yield of the upland so cultivated may be said, from the imperfect information afforded, to average about 50 lbs. of raw seed cotton per local beegah, and taking the Khoordah beegah, three of which are the equivalent of an English acre, 40 lbs. of clean good cotton (seedless) per English acre. Land of the character indicated is abundant in the province, the whole of the woodland estate of Ungool, which is Government property, being well adapted to the growing of upland cottons. A similar remark may be made of Khoordah. The extensive tract of country called the Gurjato, or Hill States, which for the most part, are covered with luxuriant forest jungle, are also well suited to the same purpose. No opinion can here be ventured as to the quality of the staple produced in these tracts, of which specimens are submitted: it is probably short and poor, while the yield is undoubtedly small. But these are faults which may arise more from the rude and negligent treatment of the plant, than from any other cause.

NATIONAL ARCHIVES OF INDIA

The seed used throughout the district for lowland cotton is procured from Khoordah and Dhenkanal, it being alleged that none other will germinate in the lowland districts. It undergoes the following preparatory processes before being placed in the ground. It is placed in a pot, and soaked in dung and water for a night, and then dried by exposure to the sun on the following day. It is afterwards laid on straw contained in an earthen vessel covered over with castor-oil leaves and placed near a fire. So soon as the seed splits and shoots it is carried away and planted; after two leaves have sprouted water is applied to the plant at intervals of two, three, and four days.

This kind is planted, for it cannot be said to be sown in ridges, the intervening channels being necessary for irrigation, which in this case is indispensable, and must be abundant and frequent. November and December are the usual months for the planting. The plants are annual, and attain a height of 4 to 5 or sometimes 6 feet. The cold weather showers falling occasionally in December, January, and February, favour the plants, and when plentiful, constitute a good season. The pickings are obtained continuously in April, May, and June; in the latter month all the bolls are picked off the plants, and open on exposure to the sun. The same plan is adopted with the uplands, when an anticipated down-pour is likely to interfere with the natural developement of the mature cotton pods on the plants at the time. After the month of June, the lowland cotton plants are plucked up and the land cleared for a pulse crop.

The yield of this variety may be said to be 200 lbs. of raw cotton per acre, giving in the usual proportions about 50 lbs. of clean cotton per acre.

The proportion of wool to seed and loss for all the varieties is very uniformly stated to be as 1 to 4, that is out of 4 lbs. of raw cotton there is obtained 1 lb. of good clean staple.

Cotton from Chittagong.

2707. [26] Kupass, Chur, Burrea, Backergunge. SHAIK UKBAR, cultivator.

2708. [44] Clean cotton, Chur Burrea, Backergunge.

MR. C. H. HARVEY reports that this is produced from native seed. It is sown from the middle of October to the beginning of November, and is ready for picking in May. It requires no irrigation.

2709. [182] Kupass, Chittagong.

2710. [181] Kupass, yellow or Nankin variety, Chittagong.

2711. [246] Kupass, Bengal. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

Cotton from Burdwan.

2712. [24] Kupass, uncleaned or seed-cotton, Cutwa.

2713. [23] Clean, Cutwa.

2714. [62] Kupass, Bood Bood.

2715. [63] Clean, Bood Bood.

2716. [70] Kupass, Poobthul.

2717. [71] Clean, Poobthul.

2718. [72] Kupass, Poobthul.

2719. [138] Kupass, Mungulkote.

2720. [137] Clean, Mungulkote.

2721. [53] Kupass, Salamabad.

2722. [54] Clean, Salamabad.

2723. [76] Kupass, Burdwan.

2724–5. [52–74] Clean, Burdwan.

MR. TWEEDIE, Secretary of the Local Committee at *Burdwan*, supplies the following information:—

The seed employed is indigenous, and the soil itself light. The height of the plant is from four to seven feet, and the approximate yield of clean cotton per acre six maunds seed-cotton giving one-fourth of clean.

The soil is ploughed four or five times before the seed is put into the ground. For three or four days previous to sowing, the seed is kept in water, and is taken out on the day before it has to be sown. It is then mixed with ashes and cow-dung, and in this state is scattered over the ground, which is again ploughed. Some cultivators, however, put four or five seeds in small holes at the interval of about 1½ cubit. No irrigation is employed just after the seed is sown. When in the months of January and February the plants rise half a cubit high, they are watered. This practice is not followed in the species of cotton called '*Nurma*,' which is cultivated in June. No irrigation is required for 'Nurma' cotton, as it is a rainy season plant.

The picking of the first-mentioned variety of cotton, called in the native dialect, 'Wesbee,' is commenced in April and finished in June and July. It requires watering three or four times in the course of its growth. The pods of 'Nurma' cotton are picked in the months of November and December.

Cotton from Bancoorah.

2726. [92] Cleaned, Gungajulghatee. RAINE HAZAREE, cultivator.

2727–8. [90-93] Kupass and cleaned, Bishenpore. NUSSER DEY, cultivator.

2729. [94] Cleaned, Sonamookhey. KENARAIN DUTT, cultivator.

The soil is sandy, but mixed with clay. The cotton is grown from native seed. Its average height is 3 feet, and produces about 1 maund 35 seers of clean cotton, and about 3 maunds and 30 seers of seed. MR. WELLS of *Bancoorah*, states:—'After ploughing the land three times before planting, water is sprinkled on the seed, and it is mixed with cow-dung and covered with earth, and allowed to remain two or three days in this state, and then planted out. It is irrigated three or four times from the time it is planted till bolls show themselves. Picking generally commences in April and lasts to the middle of July.

2730. [91] Cleaned, Jail Garden, Bancoorah. J. ANDREWS, Esq.

2731. [3] Cotton seed, Jail Garden, Bancoorah. J. ANDREWS, Esq.

The seed in this case is Egyptian; the soil a damp argillaceous sand. Only 1½ acre of land was planted, and

NATIONAL ARCHIVES OF INDIA

yielded 3 maunds* of cotton, worth about 9 maunds of seed. MR. W. S. WELLS adds:—'The soil was irrigated but little, as the unusually heavy rains this year caused the trees to shoot up somewhat quickly; consequently the production has been small and untimely, and much of the strength of the plant wasted in height and leaves.'

The sample now sent is from the second picking; the bolls commenced ripening about December, and it was then picked by the prisoners.

Cotton from Midnapore.

2732. [117] Kupass.

2733. [118] Cleaned, Midnapore. JOYSING & BAGROY SOOTOL, of *Hateamohun;* SEEDOOKOTAL, of *Goorma;* DOORGARAM SING, of *Ekoor;* and POOROO SING, of *Moorakatee,* cultivators.

The cotton is indigenous, and grows from 1 to 5 feet high. MR. R. V. COCKERELL states that the bolls are picked from October to middle of January. The sample was obtained from the second picking. As the rains were very heavy, no irrigation was employed.

2734. [101] Kupass, Midnapore.

Cotton from Bogra.

2735. [66] Cleaned, village of Deogong. DOORGAKANTH HORE, cultivator.

The seed is indigenous. The height of the plant from 3 to 4½ feet. This sample, says MR. T. P. LARKINS, was cultivated in the beginning of April, and is called the *Chaugtah* cotton. The month of April is the proper time for the cultivation of such cotton, but there is another sort of cotton called the *Bureâttee,* which is cultivated in October. Before sowing the seed the land is repeatedly ploughed and watered.

The average number of bolls grown on both plants is 150 or upwards, according to the soil. The picking of the Chaugtah cotton commences in the beginning of September. The sample sent was obtained from the last picking, which took place in November last.

The approximate quantity of seed required to cultivate a beegah of land with cotton is 10 or 12 seers, and the average produce of cotton per beegah will be about 1½ maund, which, being cleaned, would yield 20 seers of clean cotton.

There being no demand for country cotton in the market, the cultivation is very indifferent at present. If proper encouragement was held out, a vast extent of land could be cultivated in this district.

Cotton from Pubna.

2736. [51] Cleaned, Pubna.

Cotton from Monghyr.

2737. [1] Cotton bolls, Mouzah Hussungunge. SHAIK YAR ALLY RUHMAN KHAN, cultivator.

2738. [34] Kupass.

The seed was obtained from Tirhoot. The plant is from 4½ to 6 feet high, and affords 1 maund 10 seers per acre. MR. W. H. HENDERSON writes:—'The seed is sown in June, after the soil has been well ploughed, and is scattered broadcast with Indian corn. In April the first picking takes place, but little is obtained; in the second, more; and yet more after several pickings. Cotton is not generally cultivated in the district.'

2739. [35] Cotton bolls, Fort Garden. W. H. HENDERSON, Esq.

2740–1. [36–7] Kupass, Fort Garden. W. H. HENDERSON, Esq.

The seed is acclimatised New Orleans. The cotton was obtained from the first picking. The plants grew to the height of 5 feet, and afforded 1 maund 20 seers of clean cotton (to the acre?)

2742–3–4. [17–19–38] Kupass.

Cotton from Behar.

2745. [56] Kupass, Mouzah Klinjoor, Nurbut. BUJJOO SING, TEKA, MABTOO, GHUNSHAM, MUKTOO, and ROBEE MUKTOO, cultivators.

2746. [55] Cleaned, Mouzah Klinjoor, Nurbut. BUJJOO SING, TEKA, MABTOO, GHUNSHAM, MUKTOO, and ROBEE MUKTOO, cultivators.

The seed was native and the soil sandy; the average height of the plant was 4 feet. MR. J. S. DRUMMOND, of *Behar,* remarks:—'The field in which the cotton was grown was twice ploughed, once in the month of June and again immediately prior to the sowing. Previous to sowing, the seed is allowed to soak in water and saltpetre-earth for about a couple of hours.

'The date of picking could not be accurately ascertained, but the sample sent was gathered about the end of May, or the commencement of June. Judging from its appearance, it was probably gathered at a late picking, as no considerable deterioration in the article is said to take place up to the sixth picking: the sample sent is very poor.

'The seed is separated from the cotton by a primitive machine of the description of the model forwarded.

'Irrigation takes place four times; once about a fortnight after the sowing, and afterwards at intervals of twenty days or a month, as the land may require it, and the land is always manured with ashes of cowdung each time previous to the irrigation.'

Cotton from Sarun.

2747. [73] Kupass 'Bhogla' cotton, Bendoosaree, Barrah. CHUTTER DHAREE, MUBTO, and RAMUNNOGRAH TEWARY, cultivators.

2748. [75] Cleaned, Do. Do.

2749. [132] Kupass 'Boochree' cotton, Dewreah, Burrye. GUDHAREE DOOBY, cultivator.

2750. [131] Cleaned, Do. Do.

The seed is indigenous. The Bhogla cotton, according

* The weight avoird. of this maund is not stated. At the usual rate of 82 lbs. the above would give 164 lbs. to the acre.

NATIONAL ARCHIVES OF INDIA

to MR. ROSE of *Sarun*, is superior in quality, and is grown in small quantities on all sorts of land, excepting the low land. The fields are ploughed three or four times according as the soil is soft or hard, and weeded after the plants have germinated. The date of picking is the beginning of May. The above remarks are also applicable to the Boochree cotton, but this cotton is inferior in quality.

Cotton from Patna.

2751. [12] Kupass, Patna. BABOO GOOREE SHUNKER, cultivator.

2752. [18] Cleaned, Do. Do.

The seed is indigenous: the soil a black loam. Irrigation is employed. The sample is last year's. — E. L. LATOUR, Esq., Collector, *Patna.*

Cotton from Shahabad.

2753-4-5. [95-7-114] Cotton bolls, &c., Arrah. MR. MYLNE, on the estate of H. BURROWS, Esq.

2756. [96] Kupass, Arrah. MR. MYLNE.

2757. [98] Kupass, Arrah, and cleaned. MR. MYLNE.

2758. [115] Cleaned Arrah. MR. MYLNE.

The foregoing are from Egyptian seed.

2759. [99] Cotton bolls, Arrah. MR. MYLNE.

2760. [100] Kupass, Arrah. MR. MYLNE.

2761. [116] Cleaned, Arrah. MR. MYLNE.

The above are from New Orleans seed.

2762. [13] Sample of Nankin cotton, kupass, with yarn and cloth of do., Chynepore. R. W. BINGHAM, Esq.

Cotton from Tirhoot.

2763. [42] Kupass and bolls, Nanpore. CHOWDREE ROODERPERSHAD, cultivator.

2764. [43] Cleaned, Do. Do.

Native seed yielding 1 maund and 28½ seers per acre. According to MR. T. B. LANE, the cotton produced in Tirhoot is of the kinds called Bhojra, Bhogla, and Kooktee, but as the two former do not ripen till April or May, they have not been forwarded. The Kooktee ripened in September 1861. The fabric manufactured from this cotton is not white, but of darkish colour: the white is alone produced from the Bhojra and Bhogla kinds.

Cotton from Assam, Cachar, Silhet, the Garrow Hills, and Darjeeling.

From Assam.

2765. [79] Kupass, Assam. CAPTAIN MORTON.

2766. [78] Kupass, Kamroop, Assam. CAPT. LAMB.

'The produce might be greatly increased, were there sufficient demand.'

2767. [81] Clean cotton, Mattock, Assam. W. G. WAGENTRIEBER, Esq.

2768. [80] Clean cotton, Assam. LIEUT. PHAIRE.

2769. [67] Kupass, Gowhatty, Assam. REV. R. BLAND.

Grown in Mr. Bland's garden.

2770. [77] Kupass, Luckimpore, Assam. MAJOR BIVAR.

2771. [16] Cotton bolls, Assam.

From Cachar.

2772. [49] Kupass, Kookee, on southern slopes of the Burail Mountain to north of the river Barak, Cachar. CAPT. R. STEWART.

2773. [50] Cleaned Cotton, Kookee, Cachar. CAPT. R. STEWART.

2774. [68] Kupass, Naga, Kookee. CAPT. R. STEWART.

2775. [69] Cleaned cotton, Kookee, CAPT. R. STEWART.

CAPT. R. STEWART, Superintendent, *Cachar*, remarks as follows upon the soil of Cachar and the cultivation of cotton:—

'The soil upon which the cotton plant in Cachar is grown consists of a rich red clay, considerably mixed with sand, which forms the soil of the principal hills in the district, and also of the small ranges of hillocks that run through it. The cultivation lies on the slopes of these hills and mountains, such lands being never inundated, although they are wonderfully retentive of moisture. The Hill tribes, to whom the cultivation is limited, raise all that is necessary for their subsistence on the same fields which produce cotton. The same hills and slopes are now in great request for the cultivation of the tea plant, the soil being peculiarly adapted for its growth; when left to nature the soil is such as to produce the most dense jungle, and in cultivation it is fertile enough for any purpose.

'The soil of the plains of Cachar is a rich alluvial one, formed from the washings of the mountains which surround it on three sides.

'The climate is a very temperate one for Bengal, the thermometer in the shade rarely, if ever, rising above 93° or 94° Fahrenheit in the hottest weather of July and August.

'The seed produced upon the land is the same that is again sown upon it. Several endeavours have been made to introduce Mauritius and Sea-Island cotton, and other varieties, but without avail. These varieties do not appear to suit the primitive mode of cultivation to which they are subjected.

'The mode of cultivation is a peculiar one, and requires description. The cotton-bearing tracts forming the slopes of the hills in the district are, in their virgin state, covered either with glorious timber forests or dense jungles of bamboo. The latter, being more easily cut, is considered better for the cultivation, but the former is also frequently cleared for the purpose. Early in the cold season large

NATIONAL ARCHIVES OF INDIA

parties of the cultivators, the wild tribes of Kookees and Nagahs, proceed to the jungles in the vicinity of their village, and selecting good patches commence felling the forest. The bamboos and small trees are cut off about two feet from the ground, and the stumps allowed to remain in the soil. The larger trees are merely ringed and allowed to die away. When a sufficient space has been cleared, the felled bamboos and jungles are left to rot on the ground, and the effect of one or two showers at intervals, coupled with the continued dryness of the cold season, renders them by the months of March and April as inflammable as jin cotton. Towards the end of the cold season these fields of cut bamboos and jungles, sometimes embracing the whole of a hill, at other times stretching along the faces of long ridges and valleys, are set on fire in various places. Nothing can exceed the fierceness of the conflagration, or the glorious effect produced by such large masses of flame roaring and lapping the hills on all sides, and the enormous volumes of smoke that are emitted and hover like clouds in the air. The conflagration is over in a few hours, and leaves on the ground a coating of ashes about an inch or two in thickness, and this is the only manure necessary to make these hills yield fertile crops of almost every kind. By means of a small hoe, or kodalee, the soil lying below the ashes is mixed with them in the places between the stumps of the felled trees and bamboos, which are still left to cumber the ground. Nor is the immunity enjoyed by these stumps the effect of indolence, or a desire to save labour at the expense of the crop on the part of the cultivators, but, on the contrary, an established custom, which experience has forced them to adopt, for the roads and stumps serve in a great measure to prevent the loose soil being washed away from the faces of the hills, and furthermore facilitate the fresh growth of the jungle when cultivation on the spot is abandoned. The soil being thus prepared, the seeds are dropped in, nor is care taken to allot the different vegetables different compartments, but paddy, sugar-cane, tobacco, cotton, and cucumbers are found growing on the same beds. The harvest is reaped in September and October, sometimes as late as December, and the same ground is again made in many instances to yield for another year or two, after which it is abandoned and reclaimed by its pristine jungle. In seven years' time, if bamboo jungle, it is again fit for cultivation, but not for twenty or thirty if tree forests have to be cleared.

'The cotton seeds, together with others, are put in in March and April; they are planted irregularly, but never closer than 3 or 4 feet apart. The whole cultivation is weeded three or four times during the rains. The cotton flowers in July and August, the picking commences in September, and is continued till December. In such a system of cultivation of course it is impossible to obtain correct statistics as to the weight produced per acre, or the amount of labour required. Suffice it to say, that although carried on on a very small scale, it is the most profitable cultivation practised by the Hill tribes, for not only does it supply them with their own scanty clothing, but it is almost their sole article of barter with the people on the plains for salt, iron, gunpowder, cattle and ornaments.

'No manure, save the ashes of the jungle, is ever used. When the cotton seed is returned to the same soil, the stalks of the last crop are again burned on the surface. No irrigation is ever required.'

From Silhet.

2776. [48] Kupass, Silhet. F. SMITH, Esq.

2777. [47] Cleaned cotton, Silhet. F. SMITH, Esq.

The seeds are of last year's plants. The cotton was grown on a range of small hills.

From Garrow Hills.

2778. [29] Kupass, Goja and Dobunba, Garrow, Bhalukmara Hill, Pergunnah Soosoong, Garrow Hills. A. SMITH, Esq.

2779. [64] Kupass and bolls, Goja and Dobunba, Garrow, Bhalukmara Hill, Pergunnah Soosoong, Garrow Hills. A. SMITH, Esq.

The seed was originally brought from Gowalparsh, and the plant is from 3 to 6 feet high. MR. A. SMITH, Officiating collector of *Mymensing*, reports:—

'New ground is selected every year about the end of February; the jungle is burnt down to the ground, which is covered with the ashes of the burnt jungle; holes are dug at sufficient intervals, and two or three seeds thrown into each hole along with the seeds of other vegetables, such as pumpkins, and covered.

'The picking goes on, as bolls get ripe, from November to January.

'The specimens sent are from the Lower Hills, but a large quantity is grown beyond the limits, to which the natives of the plains dare not go, by the uncivilised Hill tribes, who bring it for sale to the hâts, on the British frontier; no irrigation is needed, there being pretty constant rain from May to October.'

From Darjeeling.

2780. [15] Clean cotton, Darjeeling. CAPT. MAGSON.

From Egyptian seed.

Cotton from Chota Nagpore.

2781. [40] Cotton bolls, Burbee and Bussureah, Hazareebaugh. C. E. BLECHYNDEN, Esq.

2782. [39] Seed cotton. C. E. BLECHYNDEN, Esq.

2783. [58] Clean cotton. C. E. BLECHYNDEN, Esq.

The above samples are from New Orleans seed.

2784–5–6. [57–59–129] Clean cotton. C. E. BLECHYNDEN, Esq.

These samples are from Egyptian seed.

'The specimens from New Orleans seed,' writes MR. BLECHYNDEN, 'were received in June 1860 from the Manchester Cotton Supply Association, and were first grown at Chumparun, twelve miles farther west of this station: the seed there produced was sown here in 1861.

'The Egyptian seed was also received from the Manchester Supply Association in the beginning of July 1861.

'The New Orleans cotton plant was from 2 to 5 feet high—the Egyptian from 1 to 3. Both were grown upon a common black soil.

'Commenced picking New Orleans in November. Sample from first picking. Plants now covered with bolls and flowers. Egyptian from first picking. Plants with bolls and flowers still on.

'The season has been very much against the cultivation of cotton; in the latter part too much moisture, and cloudy weather, with occasional rain, every change of the moon. The cloudy weather has prevented the usual fall of dew, and deteriorated the quality of the cotton, the heat not being sufficient to bring the bolls to maturity, and make them burst. No irrigation has been given.

'The advanced period of the season in which the cultivation was commenced has also tended to make this

NATIONAL ARCHIVES OF INDIA

season's results unfavourable, both as to quality and quantity. As the crop is only in the act of being gathered the yield of clean cotton per acre has not been determined; the same cause has also prevented the sending of the quantity of sample of cleaned cotton as required.

'The other specimen of cotton was grown from indigenous seed; in this the second year of cultivation a marked improvement is observed. The plants are 7 to 8 feet high. It is worthy of remark that this cotton has changed its time of bearing, the cotton crop of the country having been gathered two months ago, whereas these plants are continuing to blossom and bear bolls, the same as the New Orleans and Egyptian.'

2787. [8] Clean cotton, Seetagurrah Plantation, Hazarebaugh. M. LEIBERT, Esq.

2788. [7] Bolls, Do. Do.

From New Orleans seed.

2789. [84] Clean, Seetagurrah Plantation, Hazarebaugh. M. LEIBERT, Esq.

From Sea Island cotton.

2790. [9] Clean, Seetagurrah Plantation, Hazarebaugh. M. LEIBERT, Esq.

From Egyptian seed.

2791. [88] Kupass, Sillee.

2792. [86] Kupass and bolls, Rahey.

2793. [87] Clean, Rahey.

2794. [111] Kupass, Boloamat.

2795. [106] Clean, Torepa?

2796. [108] Clean, Peetoria?

2797. [109] Kupass, Leshgunge?

2798. [110] Clean, Munika.

2799. [112] Clean, Chuttur.

2800. [113] Kupass, Lohardagga.

2801. [128] Clean, Burgurh.

2802. [130] Kupass, Tamar.

All these samples are grown from indigenous seed by various native cultivators, whose names have not been forwarded. CAPT. R. C. BIRCH supplies the following information.

The plants are from 6 to 7 feet high, and the yield per acre 5 maunds, one-third clean cotton and two-thirds seed.

The cotton is grown on the hills and high lands, where the soil is naturally dry, undulating, and well-drained.

The mode of planting is as follows: From the month of February the people burn their fields with wood procured from the jungles, and leave the ashes there until a shower or two falls in July, when the seeds are sown, and the soil is then slightly ploughed. On sprouting, in August, the fields are carefully weeded, which is continued till the plants are grown up. The shrubs flower in September, and the bolls are fully open in October. In some parts of Nagpore the field is tilled and manured with ashes and cow-dung before sowing. In Purgunnah Boondoo, besides the common kind, there are two other sorts of cotton, called 'Tureea' and 'Guteh.' The former is sown in October, and picked in April and May, the field being tilled ten or twelve times before sowing; the latter is sown in July, and grows in two years. Cotton is picked two or three times in April; the trees last from three to four years, producing cotton every year, and they are 7½ feet high. This is grown by the poorest class on their own premises.

The time of picking, speaking generally, is the whole of November and December, excepting in Purgunnah Boondoo, where, as already stated above, the 'Tureea' and 'Guteh' are picked in the months of April and May.

In this country rain falls abundantly from the middle of June to the end of September, consequently no irrigation is required.

2803. [2] Cotton bolls, Maunbhoom. JADOO MANJEE and others, cultivators.

2804. [105] Clean cotton, Do. Do.

The cotton is grown in every part of the district on high lands from indigenous seed. The plants are from 4 to 5 feet high, and yield from 3 to 4 maunds per acre. CAPT. G. N. OAKES, who forwards the samples, says that this cotton is called 'Kherooa' in this district. The land is ploughed five or six times, and then the seed is sown. After the plants have grown a little, the land is kept carefully clean. The cotton is picked in October. It requires no irrigation. The samples were obtained from the third picking.

2805. [85] Cotton bolls, Jail Garden, Chybassa, Singbhoom. CAPT. R. C. BIRCH.

2806. [107] Kupass, Do. Do.

2807. [127] Clean cotton, Do. Do.

The cotton is indigenous to Singbhoom; it grows on gravelly soil to an average height of 3½ feet. MR. W. H. HAYES, Deputy Commissioner, states that the first picking commences in November. The plant is perennial, and bears well for three years; it requires little irrigation.

2808. [60] Kupass, Chota Nagpore.

Is the produce from the native crop, but the exact locality is not given.

2809. [89] Kupass, Chota Nagpore.

Grown from American seed. Grown in the German Lutheran Mission.

Cotton from the North-Western Provinces, Bundelkhund, Gwalior, and Ulwar.

2810. [46] Kupass and cleaned cotton, Kool Puhar, in the district of Humeerpore.

2811. [22] Kupass, Poongree, Banda District. H. W. DASHWOOD, Esq.

From a long and elaborate note of MR. DASHWOOD'S, we extract the following statement regarding the cultivation in Banda:—

'Cotton is a precarious crop; its success or failure depends entirely on the rain fall. It is injured by drought, but its chief risk is from excess of rain. This year considerable damage has been done to the cotton crops by the severity of the wet season, and especially by the heavy fall of September. Cotton being entirely a "Khurreef" or rain crop in this district, it cannot be sown in the low rich lands, which bear the best spring crops, and which are generally flooded in the wet season. It is sown generally on high ground, on the sides of ravines for instance, or on elevated spots where the water cannot

NATIONAL ARCHIVES OF INDIA

lodge. In its best season it is more remunerative than ordinary crops; but it is uncertain and precarious, and in the long run it is not sufficiently remunerative to induce ryots to cultivate more than a small portion of their land with it. If a man has 10 or 15 beegahs of land, he will almost certainly cultivate two or three with cotton, but he will not cultivate more. If the price were to rise, the cultivation would no doubt be extended: *and if it rose enough to make the cultivation of cotton considerably more profitable than that of other crops, it might be extended almost indefinitely.*

'In this district the same land is never cultivated with cotton in two consecutive years. After a field has borne cotton, two, and sometimes three, years are allowed to intervene before it is again sown with that crop. Entirely new lands are said to be more fruitful than any. Fresh cotton is always sown. The same plants are never allowed to remain standing for a second crop, as it is the common opinion of the people of the district that the plants produce nothing in the second year. The sowing takes place in the month of July, commonly after the first fall of rain. The ground is generally manured, if the ryot can afford it. It is ploughed only once, and never watered. As a general rule, it is weeded three or four times; occasionally even five and six times. The weeding takes place during August or September and the beginning of October. About the end of October the crop is generally matured, and the gathering takes place between this and the end of December.'

2812. [27] Clean cotton, Raepore.

2813. [28] Kupass (second quality), Do.

2814. [41] Clean cotton, Jaloun, Bundelkhund. CENTRAL COMMITTEE, *Allahabad.*

2815. [61] Clean cotton and bolls, Do. Do.

2816–17–18. [30–31–32] Clean cottons, Sutwaree, in the native state of Chirkaree, Bundelkhund.

2817 and 2818 are from American seed.

2819. [45] Clean cotton, Bundelkhund.

From Egyptian seed.

2820. [140] Kupass, Gwalior. H. H. the MAHARAJAH of GWALIOR.

2821. [141] Clean cotton, Do. Do.

2822. [14] Clean cotton, Ulwar. H.H. the MAHARAJAH of ULWAR.

Cotton from the Punjab and Sind.

2823. [139] Clean cotton, Dehra Ismael Khan. LAHORE COMMITTEE.

Grown from New Orleans seed.

2824. [21] Clean cotton, first sort, Jung District. LAHORE COMMITTEE.

2825. [20] Clean cotton, second sort, Jung District. LAHORE COMMITTEE.

2826. [135] Kupass, Umballah. Jung District. LAHORE COMMITTEE.

2827. [136] Clean cotton, Umballah. LAHORE COMMITTEE.

2828. [25] Clean cotton, Hoshiarpore. LAHORE COMMITTEE.

2829. [134] Clean cotton, Mooltan. LAHORE COMMITTEE.

Value per maund of 80 lbs., 13R. in Mooltan. 14,764 maunds annually produced in the district.

2830. [10] Clean cotton, Leia District. LAHORE COMMITTEE.

The following note is by the CENTRAL COMMITTEE, *Lahore*:—

'Cotton is grown largely in the Punjab, chiefly for home consumption; but the soil is generally not so suited for cotton as the basaltic soils of Central India. Still there is no doubt, from experiments which have been made, that the Punjab is capable of producing cotton suitable for the English market. But efforts to secure it must not be confined to making speeches at Manchester; the only practical plan is to depute persons of skill and capital to direct the people in the best mode of preparing the cotton, and to buy up the produce on the spot. Specimens of cotton from the principal cotton-growing districts of the Punjab have been included in the collection, and also a specimen of cotton grown from American seed in the Dehra Ismael Khan district. The localities best suited for the growth of cotton are the submontane districts of Umballah, Hoshiarpore, Gujerat, and Peshawur; but with irrigation it might be produced almost anywhere. From official returns published in the *Punjab Gazette* of the 28th August 1861, it would appear that altogether about 467,513 acres are under cotton cultivation in the Punjab and its dependencies. The average produce per acre of cleaned cotton varies from 50 to 150 lbs.; its price varies from 2*d.* to 4½*d.* per lb.; and the whole cotton produced per annum amounted to 20,000 tons, of which not more than 3,500 tons were exported. The time of sowing varies from February in the south, to the middle of June in some of the northern districts. The flowering commences, according to locality, between August and December; the picking, following about a month after the flowering, is continued at intervals for two months.'

2831. [133] Clean cotton, Punjab. Messrs. SMITH, FLEMING & Co.

Cotton from Sind.

2832. [142] Kupass, Shikarpoor. COLLECTOR of SHIKARPOOR.

2833. [143] Clean cotton, Jacobabad.

2834–5. [144–47] Kupass, Jacobabad.

2836. [149] Clean cotton, Khyrpoor. H.H. MEER ALI MOORAD.

2837. [145] Partly cleaned cotton, Hyderabad.

2838. [238] Clean cotton, Hyderabad.

2839. [146] Clean cotton, Seebee.

2840. [148] Kupass, Seebee.

2841. [150] Clean cotton, Seebee.

NATIONAL ARCHIVES OF INDIA

Cotton from Western India and Berar.

2842. [15] Nurma cotton, clean.

2843. [159] Lalia cotton.

2844. [154] Lalia cotton, Kupass Dundooka.

2845. [155] Lalia cotton, clean.

2846. [160] Wagaria cotton, Kupass.

2847. [153] Wagaria cotton, clean.

The above (2842–2847) are from Ahmedabad, contributed by the BOMBAY GOVERNMENT.

2848. [151] Cotton, Kutch. H.H. the RAO of KUTCH.

2849. [152] Cotton, Kutch. Messrs. SMITH, FLEMING & Co.

2850. [247] Cotton, Mangrole, Kattywar. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2851. [158] Dhollerah cotton, clean, Dhollerah, Guzerat. Messrs. SMITH, FLEMING & Co.

2852. [243] Dhollerah cotton, Guzerat. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2853–4. [168–9] Cottons, Broach. Messrs. SMITH, FLEMING & Co.

2855. [248] Cotton. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2856. [240] Cotton, Kandeish. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2857. [163] Cotton cleaned, Poonah. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

From indigenous seed.

2858. [162] Cotton cleaned, Poonah, MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

From Egyptian seed.

2859. [172] Cotton cleaned, Belgaum, — HEARN, Esq.

From Egyptian seed.

2860. [157] Coompta cotton, clean, Dharwar. Messrs. SMITH, FLEMING & Co.

2861. [170] Coompta cotton. Messrs. SMITH, FLEMING & Co.

2862. [167] Coompta cotton, Kupass. Messrs. SMITH, FLEMING & Co.

2863. [241] Coompta cotton, clean, Coompta. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2864. [244] Coompta cotton, clean, Dharwar. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2865–6–7. [161–165–166] Kupass, Bombay. Messrs. SMITH, FLEMING & Co.

2868–69–70–71–72. [180–171–173–174–175] Clean cottons, Bombay. Messrs. SMITH, FLEMING & Co.

2873. [176] Kupass, Bombay. Messrs. SMITH, FLEMING & Co.

2874. [178] Clean cotton, Bombay. Messrs. SMITH, FLEMING & Co.

2875. [179] Kupass, Bombay. Messrs. SMITH, FLEMING & Co.

2876. [177] Clean cotton, Bombay. Messrs. SMITH, FLEMING & Co.

The two last are from New Orleans seed.

Cotton from Berar.

2877–8. [183–4] Clean cottons, Bolarum. DR. RIDDELL.

2879. [185] Carded cotton, Bolarum. DR. RIDDELL.

2880. [186] Clean cotton, Bolarum. DR. RIDDELL.

From Mauritius seed.

2881. [200] Kupass, Oomrawattee. Messrs. SMITH, FLEMING & Co.

2882. [245] Kupass. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2883. [164] Clean cotton, Hingenghaut. Messrs. SMITH, FLEMING & Co.

2884. [249] Clean cotton. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

Cotton from Madras.

2885. [207] Oopum cotton, Kupass, Salem. Messrs. FISHER & Co.

From native seed.

NATIONAL ARCHIVES OF INDIA

2886. [195] Bourbon cotton, first quality, cleaned, Salem. Messrs. FISHER & Co.

2887. [196] Bourbon cotton, second quality, cleaned, Salem. Messrs. FISHER & Co.

2888. [194] Bourbon cotton, clean, Chingleput. DR. J. SHORTT.

Uncultivated.

2889. [201] Clean cotton, Chingleput. DR. J. SHORTT.

From *Gossypium arboreum.*

2890. [203] Clean cotton, Chingleput. DR. J. SHORTT.

From Egyptian seed.

2891–2. [188–9] Clean cottons, Tinnevelly. Messrs. SMITH, FLEMING & Co.

2893. [242] Clean cotton, Tinnevelly. MANCHESTER COTTON SUPPLY ASSOCIATION, *Liverpool Market.*

2894. [190] Kupass, Nellore. GOVERNMENT.

2895. [191] Kupass and clean, Nellore. GOVERNMENT.

2896. [187] Clean cotton, Nellore. Messrs. SMITH, FLEMING & Co.

2897. [197] Clean cotton, Madras. Messrs. SMITH, FLEMING & Co.

This is from Bourbon seed.

2898–9. [206–239] Clean cottons, Western Madras. Messrs. SMITH, FLEMING & Co.

Cotton from Mysore.

CONTRIBUTED BY THE GOVERNMENT OF MYSORE.

2900. [198] Clean cotton, Nugger Division.

2901. [192] Cotton bolls, Bangalore Division.

From New Orleans seed.

2902. [193] Cotton bolls, Bangalore Division.

From Egyptian seed.

2903. [204] Kupass, Nugger Division.

2904. [205] Clean cotton, Nugger Division.

2905. [208] Kupass, Chittledroog Division.

2906. [202] Clean cotton, Bangalore Division.

2907. [199] Clean cotton, Chittledroog Division.

Cotton from Arracan, Pegu, Tenasserim, and Straits Provinces.

2908. [214] Clean cotton, Arracan. Messrs. HALLIDAY, FOX & Co.

From Egyptian seed.

2909. [216] Kupass, Akyab. LOCAL COMMITTEE.

2910. [215] Clean cotton, Akyab. LOCAL COMMITTEE.

2911. [217] Clean. Red or Nankin cotton, Akyab. LOCAL COMMITTEE.

Cotton is principally grown by the Hill tribes in this province; but little is brought down to Akyab or other markets. Price from 6 to 7 rupees per maund.

2912–13. [212–213] Kupass, Moulmein.

2914. [210] Clean cotton, Pegu. LOCAL COMMITTEE, *Rangoon.*

The RANGOON COMMITTEE writes as follows:—

The area under cotton cultivation in Pegu in 1860-61 was 17,500 acres, and the estimated produce in cleaned cotton 2,116,300 lbs.

The general character of the native cotton is—fibre coarse, curly, harsh, and rather short, most tenaciously attached to the seed: but it is exceedingly strong, and in this respect lies its excellence.

Persevering efforts have been made to induce the Burmese to grow foreign cotton, but, as in the case of tobacco, without success. There are many millions of acres in Pegu now lying waste, where cotton can be grown of a quality far superior to any now known in the province. It is hoped that the recent offer by the Government of India of the fee-simple in waste lands, free of tax for ever, at the low rates of 5*s.* and 10*s.* an acre, will attract both European superintendence and capital to the mutual benefit of England and Pegu.

2915. [209] Clean cotton, Burmah. Messrs. HALLIDAY, FOX & Co.

2916. [211] Clean cotton, Rangoon. Messrs. SMITH, FLEMING & Co.

2917. [224] Clean cotton, Washington Estate, Province Wellesley, Penang. ALEXANDER HUTCHINSON, Esq.

This is raised from New Orleans seed.

This is a new estate, the proprietor and manager both being Americans. The latter is a cotton planter from the Southern States. The sample sent has been grown on the same principle of culture as cotton growers follow in the Southern States. It is from a yield the average of which gives 1425 lbs. per acre of Kupass or seed-cotton. It was planted on the 11th September 1861, came into bloom in the first week of December, and began to bear about the first week of January in the present year.

As there were at the time no gins on the estate, the cotton was separated by hand, and is consequently somewhat deteriorated by perspiration.

NATIONAL ARCHIVES OF INDIA

2918. [225] Pernambuco cotton, clean, Glugor Estate, Penang.

2919. [226] Sea-Island cotton, clean, Glugor Estate, Penang.

2920–21–22. [221–223–218] Clean cottons, Singapore. COL. CAVANAGH.

2923. [219] Sea-Island cotton, clean, Singapore. G. H. BROWN, Esq.

2924. [220] Pernambuco cotton, clean, Singapore. G. H. BROWN, Esq.

2925. [222] Malacca cotton, clean, Singapore. J. BAUMGARTEN, Esq.

[*For Tabular Synopsis, see pages* 134–7.]

Silk Cottons.

The seed pods of various genera of plants supply a material which, from its appearance, is called 'silk cotton.' It is deficient in strength, and difficult to spin, on account of the smoothness of the individual fibres. Some specimens of cloth manufactured from an admixture of cotton and the floss of the Ak (*Calotropis Hamiltonii*) are shown, and an interesting application of the material by itself is supplied by the rug (2942) exhibited and entered below.

There are two species of *Calotropis*—one the Mûdar (*Calotropis gigantea*), the other the Ak (*C. Hamiltonii*), which produce this floss in great abundance. One or other of these grow luxuriantly in all parts of the country; and should the material, as now expected,* prove of commercial value, it could be furnished at a cheap rate in large quantities. Hitherto its chief use has been for stuffing pillows, &c. The sample (2926) is a portion from that referred to in the note below.

2926. [9386] Floss or 'silk cotton' from the Ak (*Calotropis Hamiltonii*), Agra. DR. W. WALKER.

DR. WALKER appends the following remarks:—

The charge of the down is merely that of the labour employed in collecting it, and the charges incurred in packing. It may be collected at about 1R. 8A. (3*s.*) per maund (82 lbs.). The plant is to be found in the greatest abundance everywhere, growing most luxuriantly in those dry sandy tracts where nothing else will flourish. The down ought to be collected in May and June, and its collection is spread at least over two months.

2927. [229] Floss or silk cotton from Simul tree (*Bombax malabaricum*), Chota Nagpore. GOVERNMENT.

2928. [235] Silk cotton, Mysore (Bangalore Division). GOVERNMENT OF MYSORE.

2929. [231] Silk cotton from *B. heptaphyllum*, Chingleput. DR. SHORTT.

2930. [233] Silk cotton from *B. pentandrum*, Chingleput. DR. SHORTT.

2931. [234] Silk cotton from *Cynanchum*, Chingleput. DR. SHORTT.

2932. [232] Silk cotton from *Calotropis gigantea*, Chingleput. DR. SHORTT.

2933. [236] Silk cotton (*C. gigantea*), Madras. CAPT. J. PUCKLE.

2934. [230] Silk cotton, Sutwarree, Bundelkhund.

2935. [8137] Silk cotton, Madras.

2936. [228] Floss or silk cotton, uncleaned, Singapore. HON. COL. CAVANAGH.

2937. [237] Flowers of Lallang grass, Singapore. TAN KIM SING.

2938. [227] Floss or silk cotton, Singapore. TAN KIM SING.

The following manufactures, consisting chiefly of Mûdar floss, are, for convenience, exhibited in this class.

2939. [10304] Cloth, one part cotton and four parts Mûdar floss thread.

2940. [10304A] Cloth, one part cotton and one part Mûdar floss thread.

2941. [10304B] Cloth made entirely of Mûdar floss.

These 3 specimens (2939–41) were furnished by DR. WALKER, Superintendent Agra Central Prison.

2942. [5191] Rug made of Mûdar floss, Shahpore Jail, Punjab.

* Attempts in this country to work this material by means of machinery have hitherto, practically, failed. At the suggestion, however, of Mr. Stuart Clark, Inspector-General of Prisons, North-Western Provinces, a considerable quantity of it was lately forwarded to my department by Dr. Walker of the Agra Jail, and a portion having been submitted to Messrs. Thresher & Glenny (who have for a long time been devoting attention to the subject), these gentlemen are at length enabled to report their ability to turn it to account, if obtainable here in a clean, good condition at 35*l.* per ton.—J. F. W.

NATIONAL ARCHIVES OF INDIA

INTERNATIONAL EXHIBITION, 1862.

INDIA COTTON: TABULAR SYNOPSIS.

Number of Sample	Number in Catalogue	Number in Jury List and that of Cotton Supply Association	Place of Growth	Seed Employed	By whom Exhibited, Name of Cultivator, &c.	Length of Staple in Inches and Parts of an Inch: Min. (Decimal Fractions)	Max. (Decimal Fractions)	Mean (Decimal Fractions)	Mean (Vulgar Fractions, approximate)	Price per Lb.: By Jury	By Commissioner, Cotton Supply Association	Remarks by Commissioner appointed by Cotton Supply Association to examine the various Cottons in the International Exhibition (1862)
			BENGAL									
1	[2697]	119	Cuttack	Native or indigenous	Gov. of India, Gopul Patur, cultivator	·80	1·10	·95	1	Pence 7½	Pence 8½	Short strong fibre
2	[2700]	102	Do.	Do.	Government	·80	1·00	·90	9-10ths	..	..	Not worth growing
3	[2702]	120	Dhenkanal	Do.	Do.	·50	·85	·68	2-3rds	..	6	Very red; worthless
4	[2703]	126	Do.	Do.	Do.	·65	·95	·80	4-5ths	7½	7; would have been worth 9	Good; injured in ginning
5	[2704]	103	Sumbulpur	Do.	Do.	·60	·90	·75	3-4ths	..	..	
6	[2705]	104	Do.	Do.	Do.	·65	·95	·80	4-5ths	7½	7	Very white; short and tender
7	[2713]	23	Cutwa, Burdwan	Do.	Do.	·50	·80	·65	2-3rds	7¼	8	Very clean; very short; very weak
8	[2715]	63	Bood Bood, Do.	Do.	Do.	·70	·90	·80	4-5ths	7½	..	Short and coarse; spoiled; very badly ginned
9	[2717]	71	Poobthul, Do.	Do.	Do.	·70	·90	·80	4-5ths	7¼	8	Inferior; very short
10	[2720]	137	Mungulkote, Do.	Do.	Do.	·60	·90	·75	3-4ths	7¾	8 to 9	Very short, but very clean.
11	[2722]	54	Salamabad, Do.	Do.	Do.	·80	1·00	·90	9-10ths	7¼	8	Inferior; very short, but good colour
12	[2724]	74	Burdwan	Do.	Do.	·55	·85	·70	2-3rds	7¾	..	
13	[2725]	52	Do.	Do.	Do.	·90	1·20	1·05	1	7½	..	Inferior and short
14	[2726]	92	Gungajulghatee, Bancoorah	Do.	Do. Raine Hazaree, cultivator	·70	·90	·80	4-5ths	6¾	7 to 8	Very inferior, but clean
15	[2728]	93	Bishenpur Do.	Do.	Do. Nusser Dey, Do.	·80	1·00	·90	9-10ths	6¾	7 to 8	Do. do.
16	[2729]	94	Sonamookhey Do.	Do.	Do. Kenarain Dutt, Do.	·60	·90	·75	3-4ths	7	7 to 8	Do. do.
17	[2733]	118	Midnapur	Do.	Do. Joysing and Bagroy Sootol, Seadookotal, Doorgaram Sing and Pooroo Sing, cultivators	·65	·95	·80	4-5ths	6½	..	
18	[2735]	66	Deogong, Bogra	Do.	Do.	·60	·90	·75	3-4ths	8	..	Silky; spoiled in ginning
19	[2736]	51	Pubna	Do.	Do.	·75	·95	·85	7-8ths	7½	7½ to 8	Inferior and short
20	[2746]	55	Mouzah Klinjoor, Nurbut, Behar	Do.	Do. Bujjoo Sing, Teka, Mabtoo Gunsham, Muktoo and Robee Muktoo, Do.	·75	·90	·83	4-5ths	8	..	Clean, but very short
21	[2748]	75	Bendoosaree, Barrah, Sarun	Do.	Do. Chatter Dharee, Mubto and Ramun nograh Tewary, Do.	·70	·90	·80	4-5ths	6¾	..	Ruined in cleaning; chopped to bits
22	[2750]	131	Dewreah, Burrye, Do.	Do.	Do. Gudharee Dooby	·75	1·05	·90	9-10ths	..	..	Dirty and inferior
23	[2752]	18	Patna	Do.	Baboo Gooree Shunker	·50	·80	·65	2-3rds	6½	..	Chopped to bits in ginning
24	[2764]	43	Nanpore, Tirhoot	Do.	Chowdree Rooderpershad	·50	·70	·60	3-5ths	6¼	..	
25	[2768]	80	Assam	Do.	Lieut. Phaire	·60	·90	·75	3-4ths	7¾	8	Very short; good colour
26	[2767]	81	Mattock, Assam	Do.	W. G. Wagentrieber, Esq.	·60	·90	·75	3-4ths	7	8	Coarse, short, strong; bad colour
27	[2773]	50	Kookee, Cachar	Do.	Capt. R. Stewart	·60	·90	·75	3-4ths	7¼	8 to 9	Good colour; naturally very short
28	[2775]	69	Naga, Do	Do.	Do.	·70	1·00	·85	7-8ths	8	8 to 9	Very short, but white
29	[2777]	47	Silhet	Do.	F. Smith, Esq.	·50	·80	·65	2-3rds	7½	7 to 8	Very short rough fibre; very white
30	[2793]	87	Rahey, Lohurdagga, Chota Nagpore	Do.	Native cultivators, through Capt. R. C. Birch	·65	·85	·75	3-4ths	6¾	..	White, but too short to be of any value
31	[2795]	106	Torepa (?), Do.	Do.	Do. Do.	·70	1·00	·85	7-8ths	6	..	
32	[2796]	108	Peetoria (?), Do.	Do.	Do. Do.	·50	·85	·68	2-3rds	7	6 or under	Poor and weak; dusty
33	[2798]	110	Munika, Do.	Do.	Do. Do.	·75	·95	·85	7-8ths	7¼	7	White; clean; exceedingly short
34	[2799]	112	Chuttur, Do.	Do.	Do. Do.	·60	·90	·75	3-4ths	6¾	6 or less	Poor and weak; dusty
35	[2801]	128	Burgurh, Do.	Do.	Do. Do.	·70	1·00	·85	7-8ths	..	5 to 6	White; short; very weak
36	[2804]	105	Maunbhoom, Do.	Do.	Jadoo Manjee and others	·80	1·10	·95	1	6	..	
37	[2807]	127	Jail Garden, Chybassa, Singbhoom, Do.	Do.	Capt. R. C. Birch	·90	1·20	1·05	1	8	9 to 11	Good white; somewhat over-ginned
					MEAN	·66	·93	·80	4-5ths			

NATIONAL ARCHIVES OF INDIA

			NORTH-WESTERN PROVINCES, &c.										
38	[2810]	46	Kool Puhar, Humeerpur	Do.	Government	·65	·95	·80	4-5ths	7½	7 to 8		Well cleaned, but very short
39	[2812]	27	Raepore	Do.	Do.	..	..	..	..	..	9; if well cleaned		Silky staple; overgrown, yet tough; badly ginned; strong staple; bad colour
40	[2814]	41	Jaloun, Bundelkhund	Do.	Central Committee, Allahabad	·80	1·10	·95	1	7	11		White; badly cut in ginning
41	[2815]	61	Do. Do.	Do.	Do.	·60	·90	·75	3-4ths	7½	..		Short and coarse; spoilt by bad ginning
42	[2816]	30	Sutwaree, Chirkaree,	Do.	Do.	·70	·95	·83	4-5ths	7½	8		White; clean; short
43	[2818]	32	Do. Do.	Do.	Do.	·50	·80	·65	2-3rds	7			Clean; very tender; badly ginned.
44	[2821]	141	Gwalior	Do.	H. H. the Maharajah of Gwalior	..	..	..	..	..	9		Silky; short; strong
45	[2822]	14	Ulwar	Do.	H. H. the Maharajah of Ulwar	·75	·95	·85	7-8ths	7½	6		Poor; short; bad colour
					MEAN	·66	·94	·80	4-5ths				
			PUNJAB AND SIND										
46	[2825]	20	Jung District, Punjab	Do.	Lahore Committee, Government	·65	·95	·80	4-5ths	6½	7 to 8		Short, strong, and clean
47	[2824]	21	Do. Do.	Do.	Do. Do.	·50	·80	·65	2-3rds	6¾	8 to 9		Do. do.
48	[2827]	136	Umballah, Do.	Do.	Do. Do.	·70	·90	·80	4-5ths	8	..		Chopped to bits in ginning
49	[2828]	25	Hoshiarpur, Do.	Do.	Do. Do.	·70	1·00	·85	7-8ths	7½	9		Shell; short; strong; badly ginned
50	[2829]	134	Mooltan, Do.	Do.	Do. Do.	·60	·90	·75	3-4ths	8	8		Very weak, but of good colour
51	[2830]	10	Leia District, Do.	Do.	Do. Do.	·70	·90	·80	4-5ths	8½	8		White; clean
52	[2831]	133	Punjab	Do.	Messrs. Smith, Fleming, & Co.	·90	1·20	1·05	1	8½	8		Very weak, but of good colour
53	[2833]	143	Jacobabad, Sind	Do.		·70	1·00	·85	7-8ths	7½	5 to 6		Very short; dusty; inferior, but white
54	[2836]	149	Khyrpur, Do.	Do.	H.H. Meer Ali Moorad	·75	1·05	·90	9-10ths	7	6		Short; dusty; weak
55	[2837]	145	Hydrabad, Do.	Do.		·65	·95	·80	4-5ths	..	..		Dusty; very short staple; rotten fibre; naturally bad
56	[2838]	238	Do. Do.	Do.		·70	·95	·83	4-5ths	8½	..		Shelly, weak; probably spoilt in ginning
57	[2839]	146	Seebee, Do.	Do.		·85	1·15	1·00	1	7½	8		Shelly; white; weak
58	[2841]	150	Do. Do.	Do.		·90	1·20	1·05	1	9	11 to 12		Good, strong, coarse, white, well cleaned; if indigenous, very good
					MEAN	·71	1·00	·86	7-8ths				
			BOMBAY AND BERAR										
59	[2842]	156	Ahmedabad	Do.	Bombay Government	1·00	1·30	1·15	1 1-7th	10½	13 to 14		Very good; well prepared. *Nurma cotton*
60	[2843]	159	Do.	Do.	Do.	·90	1·10	1·00	1	9	9		Badly ginned; short. *Lalia cotton*
61	[2845]	155	Do.	Do.	Do.	·85	1·15	1·00	1	7½	9		Silky staple; short; damaged in ginning. *Lalia cotton*
62	[2847]	153	Do.	Do.	Do.	·90	1·10	1·00	1	8½	8 to 9		Spoiled in ginning. *Wagaria cotton*
63	[2848]	151	Kutch	Do.	H.H. the Rao of Kutch	·95	1·15	1·05	1	7½	7 to 8		Coarse, harsh, short fibre; weak; very clean
64	[2849]	152	Do.	Do.	Messrs. Smith, Fleming, & Co.	·90	1·20	1·05	1	7½	9 to 10		Good; not well cleaned
65	[2850]	247	Mangrol, Kattywar	Do.	Manchester Cotton Supply Association, Liverpool Market	·90	1·10	1·00	1	..	8 to 9		Leafy; irregular; strong
66	[2851]	158	Dhollerah, Guzerat	Do.	Messrs. Smith, Fleming, & Co.	·90	1·20	1·05	1	8½	9		Badly ginned; short. *Dhollerat cotton*
67	[2852]	243	Do. Do.	Do.	Manchester Cotton Supply Association, Liverpool Market	·80	1·10	·95	1	..	8		Coarse, strong, shelly. Do.
68	[2853]	168	Broach	Do.	Messrs. Smith, Fleming, & Co.	·75	1·05	·90	9-10ths	8	10 to 11		White; good staple; regular and strong
69	[2854]	169	Do.	Do.	Do.	·80	1·10	·95	1	7½	11½ to 12½		Very superior; well prepared
70	[2855]	248	Do.	Do.	Manchester Cotton Supply Association, Liverpool market	1·05	1·25	1·15	1 1-7th	..	8		White; leafy; weak
71	[2856]	240	Kandeish	Do.	Do.	·85	1·15	1·00	1	..	6½		Very dirty; inferior
72	[2857]	163	Poona	Do.	Do.	·90	1·10	1·00	1	11½	10½		Very good
73	[2860]	157	Dharwar	Do.	Messrs. Smith, Fleming, & Co.	·95	1·25	1·10	1 1-10th	8½	9½ to 10		Shelly and dusty; good staple; strong. *Coompta cotton*
74	[2861]	170	Coompta	Do.	Do.	·90	1·20	1·05	1	7½	9 to 10		Good staple; badly prepared; if properly ginned, 12*d.* to 13*d.* *Coompta cotton*
75	[2863]	241	Do.	Do.	Manchester Cotton Supply Association, Liverpool Market	·75	1·05	·90	9-10ths	..	6½		Very dirty; inferior
76	[2864]	244	Dharwar	Do.	Do.	·90	1·20	1·05	1	..	10 to 11		Very good staple; yellowish
77	[2858]	180	Bombay	Do.	Messrs. Smith, Fleming, & Co.	·70	1·00	·85	7-8ths	7	..		
78	[2859]	171	Do.	Do.	Do.	·90	1·20	1·05	1	7½	..		Very inferior
79	[28,0]	173	Do.	Do.	Do.	·85	1·15	1·00	1	8	7		Dirty; ill prepared; of low quality
80	[2871]	174	Do.	Do.	Do.	·80	1·10	·95	1	7½	7		Do. do. do.
81	[28 2]	175	Do.	Do.	Do.	·80	1·10	·95	1	8	..		Short; dusty
82	[2874]	178	Do.	Do.	Do.	·85	1·15	1·00	1	..	..		
83	[2833]	164	Hingenghaut, Berar	Do.	Do.	·90	1·20	1·05	1	9	10		Good
84	[2834]	249	Do.	Do.	Manchester Cotton Supply Association, Liverpool Market MEAN	·80	1·10	·95	1	..	10		White; silky; strong medium staple
						·86	1·14	1·00	1				

NATIONAL ARCHIVES OF INDIA

Number Of Sample	Number In Catalogue	In Jury List and that of Cotton Supply Association	Place of Growth	Seed Employed	By whom Exhibited, Name of Cultivator, &c.	Length of Staple in Inches and Parts of an Inch: Min. (Decimal Fractions)	Max. (Decimal Fractions)	Mean (Decimal Fractions)	Mean (Vulgar Fractions (approximate))	Price per Lb.: By Jury	By Commissioner, Cotton Supply Association	Remarks by Commissioner appointed by Cotton Supply Association to Examine the Various Cottons in the International Exhibition (1862)
			MADRAS AND MYSORE							Pence	Pence	
85	[2889]	201	Chingleput (*Gossypium arboreum*)	Native or indigenous	Dr. J. Shortt	·90	1·10	1·00	1	8½	9	Chopped to bits in ginning; should have been 12*d.* *Gossypium arboreum*
86	[2893]	242	Tinnevelly	Do.	Manchester Cotton Supply Association, Liverpool Market	·85	1·10	·98	1	..	8	Well cleaned; naturally very weak and short
87	[2891]	188	Do.	Do.	Messrs. Smith, Fleming, & Co.	·85	1·15	1·00	1	7½	6 to 7	Reddish; very weak
88	[2892]	189	Do.	Do.	Do.	·90	1·20	1·05	1	11½	7 to 8	Weak white; well cleaned
89	[2895]	191b	Nellore	Do.	Government	·75	·95	·85	7-8ths	9½	..	Very short staple; damaged in ginning
90	[2896]	187	Do.	Do.	Messrs. Smith, Fleming, & Co.	1·00	1·30	1·15	1 1-7th	8	8½	Good colour; very weak
91	[2898]	206	'Western Madras'	Do.	Do.	1·10	1·30	1·20	1 1-5th	7½	6	Badly prepared; naturally weak and poor
92	[2899]	239	Do.	Do.	Do.	·90	1·20	1·05	1	..	6½	Very dirty; inferior
93	[2900]	198	Mysore	Do.	Government of Mysore	·80	1·10	·95	1	8½	6	Short, coarse, weak fibre; red colour; very nappy; over-ginned. Should have been 9*d.*
94	[2904]	205	Do.	Do.	Do.	·80	1·25	·95	1	12½	8	Very clean; somewhat tender fibre; short
95	[2907]	199	Do.	Do.	Do.	·90	1·25	1·08	1 1-10th	10½	10	White; medium staple; rather shelly; slightly damaged in ginning
96	[2906]	202	Do.	Do.	Do.	·90	1·20	1·05	1	..	..	
					Mean	·86	1·17	1·05	1			
			ARRACAN, BURMAH, TENASSERIM, AND STRAITS' PROVINCES									
97	[2910]	215	Akyab	Do.	Akyab Committee (Gov.)	·75	·95	·85	7-8ths	6½	6 to 7	Very short and fuzzy
98	[2911]	217	Do.	Do.	Do. Do.	·65	·90	·78	4-5ths	5	..	
99	[2914]	210	Pegu	Do.	Rangoon Committee Do.	·75	1·05	·90	9-10ths	7	..	Clean, but very inferior
100	[2915]	209	Burmah	Do.	Messrs. Halliday, Fox, & Co.	·75	·95	·85	7-8ths	7½	7 to 8	Good white; strong fibre, but very short; probably cut in ginning
101	[2916]	211	Rangoon	Do.	Messrs. Smith, Fleming, & Co.	·70	1·00	·85	7-8ths	7½	..	Good colour; very short staple; probably spoilt in ginning
102	[2922]	218	Singapore	Do.	Hon. Colonel Kavanagh	1·20	1·40	1·30	1 3-10ths	13	13 to 15	Very good colour; staple strong
103	[2920]	221	Do.	Do.	Do.	1·10	1·40	1·25	1 1-4th	12½	12	Good strong wiry cotton; slightly injured in ginning.
104	[2921]	223	Do.	Do.	Do.	1·10	1·30	1·20	1 1-5th	12½	10	Very good cotton; slightly spoiled in ginning; should have been 13*d.*
105	[2925]	222	Malacca	Do.	J. Baumgarten, Esq.	1·10	1·40	1·25	1 1-4th	12½	13 to 15	Very good white cotton; coarse fibre; well cleaned
					Mean	·90	1·15	1·03				
					Do. total of native	·80	1·08	·95	9-10ths			
			BENGAL, &c.									
106	[2694]	125	Piplee, Cuttack	New Orleans	Rev. G. Taylor	·80	1·10	·95	1	11	13 to 14	Very good white; regular in fibre; very well prepared, though slightly injured in ginning
107	[2761]	116	Arrah, Shahabad	Do.	Mr. Mylne, on the estate of H. Burrows, Esq.	1·00	1·30	1·15	1 1-7th	12¼	13 to 14	Good white; fair Boweds character
108	[2783]	58	Burbee and Bussureah, Hazarebaugh, Chota, Nagpore	Do.	C. E. Blechynden, Esq.	·90	1·10	1·00	1	12½	12 to 12½	White; very nearly equal to American in staple
109	[2787]	8	Seetagurrah Plantation, Hazarebaugh	Do.	M. Leibert, Esq.	1·00	1·30	1·15	1 1-7th	..	10½ to 11	Good colour, but short in staple; not a satisfactory sample of New Orleans, but very superior to indigenous

NATIONAL ARCHIVES OF INDIA

110	[2817]	31	Sutwaree, Chirkaree, Bundelkhund	Do.	. . . . .	·80	1·10	·95	1	11	12 to 13	Well prepared; good staple; tender
111	[2823]	139	Dehra Ismael Khan, Punjab	Do.	Lahore Committee (Government) .	·90	1·20	1·05	1	..	12	Good useful cotton; white; 14*d.* if properly picked and ginned
112	[2876]	177	Bombay	Do.	Messrs. Smith, Fleming, & Co. .	·80	1·10	·95	1	8¾	..	Short, weak, dusty, and shelly
113	[2877]	183	Bolarum, Berar . . .	Do.	Dr. Riddell	·95	1·25	1·10	1 1-10th	11	11 to 12	Strong staple; very good; a little shorter than New Orleans
114	[2878]	184	Do. Do. . . .	Do.	Do.	·90	1·20	1·05	1	11	11 to 12	Do. do. do.
115	[2879]	185	Do. Do. . . .	Do.	Do.	1·10	1·30	1·20	1 1-5th	11½	..	
116	[2917]	224	Province Wellesley, Penang	Do.	A. Hutchinson, *Esq.* . . .	1·10	1·40	1·25	1 1-4th	14	14	Rather high-coloured; good strong staple; superior to New Orleans
					MEAN (N. Orleans) .	·93	1·21	1·07	1			
117	[2918]	225	Glugor Estate, Do. .	Pernambuco	. . . . .	1·20	1·40	1·30	1 3-10ths	13	16	Beautiful white cotton; very good
118	[2924]	220	Singapore	Do.	G. H. Brown, Esq.	1·10	1·30	1·20	1 1-5th	12½	12 to 13	Good strong, coarse cotton; very clean; injured by ginning; would have been worth 18*d.* to 20*d.*
119	[2880]	186	Bolarum, Berar . . .	Mauritius	Dr. Riddell	1·50	2·10	1·80	1 4-5ths	14½	..	Long staple mixed with short*
120	[2888]	194	Chingleput, Madras . .	Bourbon	Dr. J. Shortt	·90	1·20	1·05	1	10½	13 to 14	Very good silky cotton, especially commended
121	[2886]	195	Salem Do. . .	Do.	Messrs. Fisher & Co. . . .	1·00	1·20	1·10	1 1-10th	12½	14 to 15	Beautiful colour; fully equal to fair New Orleans; would have been worth, if cleaned by Macarthy's gin, 15*d.* to 16*d.*
122	[2887]	196	Do.	Do.	Do.	1·15	1·35	1·25	1 1-4th	12	14 to 15	Do. do. do.
123	[2897]	197	Madras	Do.	Messrs. Smith, Fleming, & Co. .	1·00	1·25	1·13	1 1-8th	12½	..	Very good; equal to New Orleans; well cleaned, but somewhat overgrown
124	[2730]	91	Jail Garden, Bancoorah .	Egyptian	J. Andrews, Esq.	1·25	1·45	1·35	1 1-3rd	..	14	Very white; good strong fibre; equal to New Orleans
125	[2757]	98	Arrah, Shahabad . . .	Do.	Mr. Mylne, on the estate of H. Burrows, Esq.	1·20	1·50	1·35	1 1-3rd	..	14 or more	Do. do. resembling New Orleans
126	[2758]	115	Do. Do. . . .	Do.	Do. Do. . . .	1·20	1·45	1·33	1 1-3rd	13½	15 to 16	Good strong, serviceable cotton; longer than New Orleans, but not equal to Egyptian
127	[2786]	129	Burbee and Bassureah, Hazarebaugh	Do.	C. E. Blechynden, Esq. . . .	·90	1·20	1·05	1	..	10 to 11	Very good colour, but not equal to New Orleans
128	[2784]	57	Do. Do. Do.	Do.	Do.	·80	1·10	·95	1	13	13 and more	Very good cotton; quite equal to middling American
129	[2785]	59	Do. Do. Do.	Do.	Do.	1·20	1·40	1·30	1 3-10ths	..	14 to 15	Very good cotton
130	[2790]	9	Seetagurrah Plantation, Hazarebaugh	Do.	M. Leibert, Esq.	·95	1·15	1·05	1	..	9	White; short; deteriorated
131	[2819]	45	Sutwaree, Chirkaree, Bundelkhund	Do.	. . . . .	1·30	1·60	1·45	1½	17	16 to 18	Very like true Egyptian
132	[2858]	162	Poona	Do.	Manchester Cotton Supply Association, Liverpool Market	1·25	1·55	1·40	1 2-5ths	14	13 to 14	Good colour; not so long as Egyptian
133	[2859]	172	Belgaum	Do.	Mr. Hearn	·90	1·20	1·05	1	12	..	Very good; like Egyptian
134	[2890]	203	Chingleput	Do.	Dr. J. Shortt	·95	1·25	1·10	1 1-10th	11½	13 to 15	Very good, desirable cotton; not so long as Egyptian
135	[2908]	214	Arracan	Do.	Messrs. Halliday, Fox, & Co. .	1·10	1·30	1·20	1 1-5th	13	12½	Good useful cotton, but overgrown; reddish
					MEAN (Egyptian) .	1·09	1·34	1·22	1½			
136	[2789]	84	Seetagurrah Plantation, Hazarebaugh	Sea Island	M. Leibert, Esq.	1·55	1·85	1·70	1 2-3rds	9½; if well cleaned 24	12 to 16	Very short for Sea Island; probably spoilt in ginning; yellowish
137	[2919]	226	Glugor Estate, Penang .	Do.	. . . . .	1·60	2·00	1·80	1 4-5ths	24	36	A very good sample of Sea Island cotton
138	[2923]	219	Singapore	Do.	G. H. Brown, Esq.	1·35	1·65	1·50	1½	14	18 to 24	Beautiful cotton.
					MEAN	1·50	1·83	1·66				

* But for an accidental admixture previously to examination, this cotton would have been valued at 2*s.* and upwards. In February 1860 it was valued at 16*d.* in Liverpool.
Length of the long staple kind only inserted.

NATIONAL ARCHIVES OF INDIA

FIBRES.*

In the arrangement of this important division, the following classification, founded on the capability of the different fibres to fulfil certain functions, has been adopted.

I.—FIBRES SUITED FOR SPINNING AND MANUFACTURING PURPOSES.

a. **FLAX** (*Linum usitatissimum*).

2943. [5793] Flax and flax stems from acclimatised seed, Sealkote, Punjab. INDIAN FLAX COMPANY (Limited), *Belfast.*

2944. [5794] Flax and flax stems from native seed.

2945. [5786] Unsteeped flax from Riga seed.

2946. [5787] Flax (native seed).

The above samples were prepared under the superintendence of MR. WIGHTMAN, the agriculturist of the Indian Flax Company (Belfast). The LAHORE CENTRAL COMMITTEE, through whom the samples were forwarded, append the following remarks: —

Flax is mentioned by Strabo as one of the staples of this part of India. A small quantity of Riga seeds, which had been imported experimentally by Dr. Jameson, Superintendent of the Government Botanical Gardens at Saharunpore, was distributed amongst the peasants, with instructions as to the mode of cultivation; an agent of great practical experience was deputed to examine and report upon the qualifications of different districts for the growth of flax, and a staff of natives were trained by him to act as scutchers.

In 1856, two tons of flax produced under his superintendence in the district of Goojranwalla were sent to England, and were sold for 92*l.* 2*s.* 2*d.*, realising a net profit of 47 per cent.

In 1857, 8 cwt. of flax, grown at Juddura, a tract of country in the Kangra district, bordering on the River Beas, were sent home, and were valued at from 55*l.* to 60*l.* a ton.

In consequence of the success of these experiments, an association, called the 'Indian Flax Company,' has been newly established in Belfast, and has sent out an agent to buy up flax produce. He has made the district of Sealkote his head quarters, and, as far as can be judged, has every prospect of ultimate success, as the natives are now beginning to see that there is a day of large profit before them, and join heartily in the movement.

2947. [3365] Flax from imported seed.

2948. [10339] Flax from imported seed.

Grown in the jail garden, Hazareebaugh, Chota Nagpore.

b. **RHEA** (*Bœhmeria nivea*, also *Urtica nivea* and *U. tenacissima*).

Of all Indian fibres, the one which at present attracts most attention in this country is that of the Rhea. As soon as arrangements have been effected for its production, along with that of other species of nettle which abound in various parts of India, it is anticipated that fibres from this class of plants will eventually occupy a position second only in importance to that of cotton and flax. Late experiments have shown that the fibre of the Rhea can be turned to account for the manufacture of a variety of fabrics of a very valuable and useful description; and its extended cultivation in India is worthy of every attention and encouragement.* The great desideratum is an efficient machine for the separation of the fibre from its parent stem.

2949. [5266] Rhea fibre (*Bœhmeria nivea*), Gowhatty, Assam. H. BAINBRIDGE, Esq.

2950. [7783] Rhea fibre, Debrooghur, Assam. REV. E. H. HIGGS.

2951. [5330] Rhea fibre, Luckimpore, Assam. AMEER of LUCKIMPORE.

2952. [5331] Rhea fibre, Luckimpore, Assam. H. L. MICHEL, Esq.

2953. [8113] Rhea fibre.

2954. [8114] Rhea fibre.

2955. [9379] Talee Ramee (*B nivea*), Malacca. C. EVANS, Esq.

c. **PUYA** (*Bœhmeria puya*).

Although botanically a different species, the fibre of this plant is almost identical with that furnished by the Rhea. It flourishes at Darjeeling and other places in the north of India. Its commercial value is the same as that of Rhea.

* For further information see Dr. Royle's 'Fibrous Plants of India;' also work on 'Flax, Cotton, and other Fibre-yielding Plants of India;' by Dr. J. Forbes Watson, published for the Society of Arts, by Messrs. Bell & Daldy.

* Some bales of Rhea fibre, lately put up for sale, realised at the rate of 80*l.* per ton.

NATIONAL ARCHIVES OF INDIA

2956. [8134] Puya stems (*Bœhmeria puya*), Deyra Dhoon.

2957. [8132] Puya fibre, Darjeeling.

2958-9. [8155-6] Puya fibre, finally prepared by chemical action, Darjeeling.

d. **NILGIRI NETTLE** (*Urtica heterophylla*).

This nettle abounds in the Nilgiri Hills and also in some other parts of the country. It furnishes a fibre of such a nature that the term 'vegetable wool' has been applied to it. The samples exhibited have been valued at 70*l.* to 80*l.* per ton.

2960. [4850] Nilgiri nettle (*Urtica heterophylla*), from old wood. W. G. McIVOR, Esq.

2961. [4850A] Nilgiri nettle, from new wood.

MR. McIVOR in forwarding these excellent specimens appends the following remarks: —

The plant grows wild all over the Nilgiris, and as it is well known to the natives, its cultivation might be readily extended. Its cultivation on the Hills would pay well as soon as the rail is finished to Coimbatore.

With reference to the preparation of the fibre, that from the bark of the old wood was steeped in cold water for about six days.

The bark of the young wood was steeped in hot water for about twenty-four hours, when the fibre was found to separate readily from the pulp. Neither of the specimens were exposed more than three weeks to bleach, and, consequently, the colour is not so good as would have been obtained had more time been occupied in the bleaching process.

e. **MÛDAR or YERCUM** (*Calotropis gigantea*), also **AK** (*C. Hamiltonii*),

Have already been referred to under the head of Silk Cottons. The stems of these two species furnish a valuable fibre, which is, however, very difficult of extraction.

The following samples have been forwarded for exhibition: —

2962. [8133] Yercum (*Calotropis gigantea*), Bangalore. DR. KIRKPATRICK.

2963. [4843] Yercum, Madras. DR. HUNTER.

2964. [4854] Tow from yercum, Madras. DR. HUNTER.

2965. [4888] Yercum or Mûdar, Chingleput. DR. J. SHORTT.

Prepared as follows: —

The branches are gathered and dried in the sun for from twenty-four to thirty-six hours, when they are taken up, the bark peeled from the woody parts, and the fibres gathered. If placed out in the dew for a night, they lose their greenish tint, and become white.

2966. [4011] Yerooka (*C. gigantea*), Salem. H. A. BRETT, Esq.

2967. [9385] Yercum, Bolarum. DR. RIDDELL.

2968. [8157] Yercum, Shahpore, Punjab.

2969. [8115] Yercum, Bengal.

2970. [8136] Handkerchief made of Mûdar fibre. INDIA MUSEUM.

f. **BEDOLEE SUTTA** (*Pederia fœtida*).

This excellent fibre is the produce of a creeper which grows abundantly on grass alluvial deposits along some parts of the banks of the Brahmaputra in Assam. It is particularly worthy of attention, as its fibre is of a very valuable description. From its appearance it has been named 'vegetable silk.' The two samples exhibited were originally furnished by COLONEL HANNAY.

2971. [8161] Stems of the *Pederia fœtida*, Assam. INDIA MUSEUM.

2972. [8161A] Fibre from *P. fœtida*, Assam. INDIA MUSEUM.

II.—FIBRES SUITED FOR SPINNING AND MANUFACTURING PURPOSES, BUT OF INFERIOR DURABILITY TO THE PRECEDING.

a. **JUTE.**

There are two species which afford this well-known article of commerce, viz. *Corchorus olitorius* and *C. capsularis*. Both are largely cultivated. The extent to which jute, in either its raw or manufactured form, is exported from India, will be gathered from the subjoined tables. The first (p. 141) shows the quantity of jute and jute-rope exported from India to all parts from 1850-51 to 1860-61, and the second (p. 142) the quantity of gunnies (pieces of gunny cloth) and gunny-bags

NATIONAL ARCHIVES OF INDIA

(which are made almost entirely of jute) to all parts for the same period.

2973. [5793] Jute (*Corchorus olitorius*), Hooghly.

2974. [9168] Jute, Midnapore.

2975. [3191] Jute, Darjeeling. DR. CAMPBELL.

2976. [5924] Jute, Assam. LIEUT. PHAIRE.

2977. [9384] Jute, Cuttack.

The plant is to be found under cultivation all over the district. Every farmer requires rope and twine, and so grows a little jhote. The fibre is extracted as in the case of the 'sunn' hemp. In the bazaar jute sells at 10 lbs. per shilling, and the rope at from 5 to 7 lbs. weight for do. Gunnies are made of this fibre at Cuttack and elsewhere in the district, while a good proportion is taken up to Calcutta.*

2978–9. [5069–70] Jute, bleached for manufacture of paper, &c. MR. C. F. JEFFREY.

In these samples the difficulties attendant upon the bleaching of jute appear to have been to a very considerable extent overcome.

b. SUFET BARIALA (*Sida rhomboidea*).

This fibre is very similar to jute in appearance; but it is considered to be intrinsically so superior that it is worth from 5*l.* to 6*l.* more per ton, and it has accordingly been placed next to that fibre, in order to attract to it the attention which it deserves.

2980. [9387] Sufet bariala (*S. rhomboidea*). R. STURROCK, Esq.

c. AMBAREE or HEMP-LEAVED HIBISCUS (*Hibiscus cannabinus*).

This plant furnishes a portion of the so-called 'brown hemp' exported from Bombay. It is readily cultivated, and with more attention to its preparation, is calculated to compete with jute.

2981. [8116] Patwa (*Hibiscus cannabinus*), Lucknow.

Every ryot sows a small quantity along the edges of his usual crops for his own use. It is not, but it might be, cultivated extensively all over Oude, and in all kinds of soil. It is sown in the beginning of the rains, and when it commences to flower, it is cut and treated exactly in the same way as 'sunn hemp' from *Crotalaria juncea*. The proportion of fibre is about half the weight of the plant. It is used for making rope, sackcloth, twine, paper, &c. The cost of the prepared fibre is from three to four rupees per maund, according to its strength, length, and cleanliness.*

2982. [4881] Palungoo (*H. cannabinus*), Chingleput. DR. SHORTT.

Prepared carelessly by the native rolling process, which accounts for its dark colour.

2983. [8117] Ambaree (*H. cannabinus*), Bolarum. DR. RIDDELL.

2984. [10060] Sunn Okra (*H. cannabinus*), Lahore.

This grows abundantly, but its fibre is inferior to that of the true hemp. Price at Lahore from 10*l.* to 14*l.* per ton.†

d. ROSELLE (*Hibiscus sabdariffa*).

Commonly cultivated in gardens for the sake of its leaves, which are eaten in salads. Worthy of extended cultivation on account of its fibre.

2985–86–87. [8118–20–21] Roselle (*Hibiscus sabdariffa*), Bolarum. DR. RIDDELL.

2988. [4008] Gango (*H. sabdariffa*), Salem. H. A. BRETT, Esq.

e. OKRO (*Abelmoschus esculentus*).

DR. RIDDELL, from his experiments, strongly recommends this plant, as furnishing an excellent fibre for the manufacture of paper.

2989. [8122] Okro (*A. esculentus*), Bolarum. DR. RIDDELL.

* Local Committee, *Cuttack.*

* Central Committee, *Lucknow.*
† Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE* OF JUTE AND JUTE ROPE EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD, FROM 1850–51 TO 1860–61 INCLUSIVE.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		North America		China		Arabian and Persian Gulf		Islands and Shores of the Indian Seas		All other Places		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850-51	Bengal	63,273,168	191,069	1,146,320	3,441	43,568	130	760,480	2,282	..	..	..	..	..	..	4,480	14	65,228,016	29,120	196,936
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	63,273,168	191,069	1,146,320	3,441	43,568	130	760,480	2,282	..	..	..	..	..	..	4,480	14	65,228,016	29,120	196,936
1851-52	Bengal	55,947,920	168,974	1,874,768	5,623	..	..	2,126,432	6,379	..	..	..	..	..	..	..	..	59,949,120	26,763	180,976
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	55,947,920	168,974	1,874,768	5,623	..	..	2,126,432	6,379	..	..	..	..	..	..	..	..	59,949,120	26,763	180,976
1852-53	Bengal	35,278,544	101,380	1,817,984	5,178	30,016	85	2,028,208	5,804	..	..	..	..	27,440	127	784	4	39,182,976	17,492	112,578
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	35,278,544	101,380	1,817,984	5,178	30,016	85	2,028,208	5,804	..	..	..	..	27,440	127	784	4	39,182,976	17,492	112,578
1853-54	Bengal	41,498,240	117,982	4,596,704	12,908	..	..	10,833,648	30,452	..	..	112	1	49,840	167	86,240	259	57,064,784	25,475	161,769
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	41,498,240	117,982	4,596,704	12,908	..	..	10,833,648	30,452	..	..	112	1	49,840	167	86,240	259	57,064,784	25,475	161,769
1854-55	Bengal	63,363,888	184,588	3,870,720	12,280	..	..	10,494,400	30,432	..	..	..	..	44,128	300	578,256	1,641	78,351,392	34,978	229,241
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	63,363,888	184,588	3,870,720	12,280	..	..	10,494,400	30,432	..	..	..	..	44,128	300	578,256	1,641	78,351,392	34,978	229,241
1855-56	Bengal	85,751,568	285,499	6,220,368	20,705	118,720	393	6,085,520	20,223	173,152	560	..	..	255,248	818	166,768	600	98,771,344	44,094	328,798
	Madras	92,736	278	..	..	..	..	..	..	..	..	..	..	..	..	..	..	92,736	41	278
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	85,844,304	285,777	6,220,368	20,705	118,720	393	6,085,520	20,223	173,152	560	..	..	255,248	818	166,768	600	98,864,080	44,135	329,076
1856-57	Bengal	55,164,816	201,122	7,277,200	26,483	10,864	40	12,569,984	45,824	137,088	500	..	..	35,168	110	268,352	978	75,463,472	33,689	275,057
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	55,164,816	201,122	7,277,200	26,483	10,864	40	12,569,984	45,824	137,088	500	..	..	35,168	110	268,352	978	75,463,472	33,689	275,057
1857-58	Bengal	75,065,312	251,275	5,042,240	24,274	70,448	235	7,709,520	25,884	..	..	..	..	31,024	189	429,072	1,435	88,347,616	39,441	303,292
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	75,065,312	251,275	5,042,240	24,274	70,448	235	7,709,520	25,884	..	..	..	..	31,024	189	429,072	1,435	88,347,616	39,441	303,292
1858-59	Bengal	..	451,588	12,163,760	40,546	..	..	9,452,576	31,509	..	..	..	..	..	..	439,600	1,456	..	..	525,099
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	..	451,588	12,163,760	40,546	..	..	9,452,576	31,509	..	..	..	..	..	..	439,600	1,456	..	..	525,099
1859-60	Bengal	76,418,048	260,544	5,609,632	18,699	25,200	84	2,663,024	8,871	..	..	74,928	250	..	..	463,680	1,570	85,254,512	38,060	290,018
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	76,418,048	260,544	5,609,632	18,699	25,200	84	2,663,024	8,871	..	..	74,928	250	..	..	463,680	1,570	85,254,512	38,060	290,018
1860-61	Bengal	103,447,456	346,364	11,208,472	37,512	..	..	6,385,064	21,380	53,760	180	155,288	520	..	..	1,080,240	41,927	122,325,280	53,716	409,371
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	ALL INDIA	103,447,456	346,364	11,203,472	37,512	..	..	6,385,064	21,380	53,760	180	155,288	520	..	..	1,080,240	41,927	122,325,280	53,716	409,371

* The Indian rupee is here converted at the exchange of two shillings.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE NUMBER AND VALUE (AS FAR AS CAN BE ASCERTAINED) OF GUNNY BAGS AND OF GUNNIES (PIECES OF GUNNY CLOTH) EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61 INCLUSIVE.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		North America		China		Arabian and Persian Gulfs			Islands and Shores of the Indian Seas			Other Parts			Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quan.	Value	Quantity		Val.	Quantity		Value	Quantity		Value	Quantity		Value
		pieces	£	pieces	£	pieces	£	pieces	£	pieces	£	bags	pieces	£	bags	pieces	£	bags	pieces	£	bags	pieces	£
1850–51	Bengal	69,636	1,565	..	..	2,180	94	2,290,427	130,249	..	..	..	4,000	44	..	1,286,150	17,685	..	701,145	8,450	..	4,353,538	158,087
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	27,700	..	292	27,700	..	292
	Bombay	..	..	..	..	..	..	..	..	..	..	..	550	8	..	..	..	..	1,150	34	..	1,700	42
	All India	69,636	1,565	..	..	2,180	94	2,290,427	130,249	..	..	..	4,550	52	..	1,286,150	17,685	27,700	702,295	8,776	27,700	4,355,238	158,421
1851–52	Bengal	67,650	789	..	..	100	20	8,391,719	260,865	17,375	211	..	..	..	..	690,918	10,179	..	561,710	7,206	..	9,729,472	279,270
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	2,500	..	25	39,050	..	399	41,550	..	424
	Bombay	..	..	..	..	..	..	..	..	..	..	..	154	7	..	..	..	..	445	19	..	599	26
	All India	67,650	789	..	..	100	20	8,391,719	260,865	17,375	211	..	154	7	2,500	690,918	10,204	39,050	562,155	7,624	41,550	9,730,071	279,720
1852–53	Bengal	5,100	52	25,000	256	274	11	3,347,580	169,648	245,750	2,518	..	..	..	..	1,128,323	20,026	..	664,269	8,770	..	5,416,296	201,281
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17,870	..	236	17,870	..	236
	Bombay	..	..	..	..	..	..	..	..	..	..	..	6,000	150	..	..	..	..	..	..	..	6,000	150
	All India	5,100	52	25,000	256	274	11	3,347,580	169,648	245,750	2,518	..	6,000	150	..	1,128,323	20,026	17,870	664,269	9,006	17,870	5,422,296	201,667
1853–54	Bengal	16,124	193	..	..	17,100	289	5,539,788	138,489	19,700	244	..	6,400	106	..	1,017,660	18,251	..	1,264,746	16,794	..	7,881,518	174,366
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	34,950	..	379	34,950	..	379
	Bombay	..	..	..	..	..	..	..	..	..	..	..	4,370	90	..	..	..	..	6,010	91	..	10,380	181
	All India	16,124	193	..	..	17,100	289	5,539,788	138,489	19,700	244	..	10,770	196	..	1,017,660	18,251	34,950	1,270,756	17,264	34,950	7,891,898	174,926
1854–55	Bengal	50,300	515	..	..	..	..	9,138,141	180,954	1,000	11	..	..	..	..	778,076	14,732	..	1,262,146	17,414	..	11,229,663	213,626
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	115,440	..	1,381	115,440	..	1,381
	Bombay	..	..	..	..	..	..	..	..	..	..	10,500	..	208	..	..	..	..	850	131	11,350	..	339
	All India	50,300	515	..	..	..	..	9,138,141	180,954	1,000	11	10,500	..	208	..	778,076	14,732	116,290	1,262,146	18,926	126,790	11,229,663	215,346
1855–56	Bengal	89,616	3,160	8,300	115	..	..	9,251,758	273,660	29,000	375	..	400	10	..	970,553	14,301	..	510,789	10,493	..	10,860,416	302,114
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	17,010	..	222	17,010	..	222
	Bombay	..	..	..	..	..	..	..	..	..	..	364	..	4	..	..	..	..	..	..	364	..	4
	All India	89,616	3,160	8,300	115	..	..	9,251,758	273,660	29,000	375	364	400	14	..	970,553	14,301	17,010	510,789	10,715	17,374	10,860,416	302,340
1856–57	Bengal	37,830	418	3,705	57	380	60	6,355,142	324,752	3,000	75	..	1,990	22	..	2,046,189	36,223	..	933,046	14,474	..	9,381,282	376,081
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,643	..	167	2,643	..	167
	Bombay	..	..	..	..	..	..	..	..	..	..	20	..	5	..	..	..	..	..	..	20	..	5
	All India	37,830	418	3,705	57	380	60	6,355,142	324,752	3,000	75	20	1,990	27	..	2,046,189	36,223	2,643	933,046	14,641	2,663	9,381,282	376,253
1857–58	Bengal	72,000	1,139	21,000	275	..	..	4,155,890	167,094	..	..	..	5,900	83	..	574,273	31,563	..	1,063,016	16,423	..	5,892,079	216,577
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8,683	..	469	8,683	..	469
	Bombay	..	..	..	..	..	..	..	..	..	..	cwt. 10	..	21	..	..	..	2,172	..	25	2,172	..	46
	All India	72,000	1,139	21,000	275	..	..	4,155,890	167,094	..	..	cwt. 10	5,900	104	..	574,273	31,563	10,855	1,063,016	16,917	10,855	5,892,079	217,092
1858–59	Bengal	68,934	3,646	225	2	..	..	5,142,367	348,113	4,000	100	..	..	..	..	..	..	..	2,576,557	39,168	..	7,792,083	391,029
	Madras	14,424	286	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	15,858	709	..	30,282	995
	Bombay	..	..	..	50	..	..	..	..	..	..	..	..	338	..	..	..	..	..	12	..	..	400
	All India	83,358	3,932	225	52	..	..	5,142,367	348,113	4,000	100	..	..	338	..	..	..	..	2,592,415	39,889	..	7,822,365	392,424
1859–60	Bengal	42,504	5,415	1,000	17	..	..	4,543,629	296,799	11,500	425	..	950	14	..	..	..	..	1,837,869	30,647	..	6,437,452	333,317
	Madras	..	..	300	5	..	..	..	..	..	..	..	..	..	..	..	..	..	5,774	364	..	6,074	369
	Bombay	..	..	..	..	..	..	..	..	..	..	..	5,475	147	..	..	..	..	10,000	144	..	15,475	291
	All India	42,504	5,415	1,300	22	..	..	4,543,629	296,799	11,500	425	..	6,425	161	..	..	..	..	1,853,643	31,155	..	6,459,001	333,977
1860–61	Bengal	39,400	5,135	..	..	2,000	40	2,265,659	307,921	17,900	317	..	500	10	..	..	..	..	2,380,099	45,467	..	4,705,558	358,891
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,424	66	..	2,424	66
	Bombay	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4,000	86	..	4,000	86
	All India	39,400	5,135	..	..	2,000	40	2,265,659	307,921	17,900	317	..	500	10	..	..	..	..	2,386,523	45,619	..	4,711,982	359,043

NATIONAL ARCHIVES OF INDIA

2990. [9181] Benda (*A. esculentus*), Madras. H.H. the RAJAH of VIZIANAGRAM.

2991. [10723] Benda, Mangalore. V. P. COELHO, Esq.

Other fibres from the same natural family (*Malvaceæ*) are likewise worthy of attention. They include the following:—

2992. [4880] Indian mallow (*Abutilon indicum*), Chingleput. DR. SHORTT.

The plants are gathered and freed of their leaves and twigs, and are put out to dry in the sun for a couple of days. They are then taken up, tied into bundles, and placed under water for about ten days, after which they are taken out, and the fibres are well washed to remove the bark and other foreign matter that may be adhering to them, and are placed in the sun to dry.

2993. [8131] Indian mallow (*A. indicum*), Madras. DR. HUNTER.

2994. [4853] Indian mallow Do. Do.

2995. [10724] Jungle Bende (*Hibiscus* sp.), Mangalore. V. P. COELHO, Esq.

2996. [8119] Jungle mallow (*Hibiscus* sp.) DR. RIDDELL.

2997. [8125] Wild Bende (*Hibiscus* sp.) DR. RIDDELL.

2998. [9165] Paharea Jute (*Hibiscus* sp.) Cuttack.

2999. [5791] *Urena lobata*, Burmah.

This plant is the pest of Rangoon and its neighbourhood, springing up spontaneously wherever the jungle is cleaned, and rapidly forming a dense mass of luxuriant vegetation.

The specimen of fibre exhibited has been manufactured in the jail by simple maceration, and afterwards beating the stalks. Very good 'gunny' has been made from it, and it is believed that this fibre might, if treated with due care and skill, prove valuable.

Any quantities of the plant may be had for the mere trouble of gathering it.*

3000. [8142] Fibre of *Malope grandiflora*. DR. RIDDELL.

3001. [4852] *Cryptostegia grandiflora*, Madras. DR. HUNTER.

The plant is common in the south, and yields a fine silky fibre capable of being spun into fine yarn, and of employment for many of the purposes to which flax is applicable.

III.—FIBRES CHIEFLY SUITED FOR THE MANUFACTURE OF CORDAGE, TWINE, ETC.

a. **HEMP** (*Cannabia sativa*).

It is cultivated in many parts of India for the sake of the 'Bhang' or intoxicating resin of its leaves, but as yet only occasionally for its fibre.

3002. [10245] Sunn Bhang (*C. sativa*), Kangra, Punjab.

It grows spontaneously and in abundance everywhere in the submontane tracts, but is cultivated for the fibre only in the eastern portions of the Kangra, and in the Simla Hills. In 1859 an experimental consignment of two tons of Himalayan hemp was valued in the English market at from 30*l.* to 32*l.* per ton, and during the past year another larger consignment of hemp has been despatched at Government expense, by request of the merchants of Dundee. The price at Lahore is about 15*l.* or 16*l.* per ton.*

3003. [8135] Himalayan hemp (*C. sativa*), Kangra.

3004. [8123] Himalayan hemp.

3005. [8124] Himalayan hemp. R. STURROCK, Esq.

Opened mechanically in Dundee. Worth 40*l.* per ton.

3006. [2731] Hemp (*C. sativa*), Bangalore. DR. KIRKPATRICK.

3007. [5902] Hemp, Calcutta. Messrs. AHMUTY & Co.

b. **SUNN HEMP** (*Crotalaria juncea*).

This plant furnishes the vast proportion of the so-called hemps exported from India. The table on page 145 shows the quantity and value of the 'hemp' and also

* Local Committee, *Rangoon.*

* Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

hemp rope, of this kind sent from India to all parts.

3008. [7772] Sunn (*Crotalaria juncea*), Hooghly.

3009. [2866] Sunn, Raepore.

3010. [9169] Sunn, Lucknow.

Cultivated near cities by hundreds of beegahs; but in the vicinity of villages only in small quantities, principally for the purpose of making fishing nets. Its cultivation can be extended all over Oude, and principally where a light soil exists. It is sown very thickly at the beginning of the rains, so that it may grow tall and thin. When it begins to flower, it is cut near the root, tied in large bundles and immersed in water, putting some weight on it (generally mud) to prevent its being carried away. After remaining immersed from four to eight days it is withdrawn from the water, taken by handfuls, beaten on a piece of wood or stone, and washed till quite clean, and the cuticle with the leaves completely removed from the other portion of the plant. Each handful is then piled musket fashion, and left to dry. When perfectly dry, the woody portion, which has been more or less broken, is separated from the fibre by further beating and shaking. From 3 to 6 maunds of fibre are extracted from each beegah of plant. The fibre is used for making rope, sackcloth, nets, twine, and paper. The raw material on the field, as plant, costs from two to four rupees per beegah, according to quality; and the prepared fibre costs from four to ten rupees per maund, according to strength, length, and cleanliness of fibre.*

3011. [9411] Sunn (*Crotalaria juncea*), Cuttack.

Under its local synonymes, *Chuniput* and *Chumese*, this plant is grown in this district in sufficient quantities to supply its wants, and probably more. It requires comparatively but little tillage, and not much after-tending. The plants, when site and soil agree, attain to a height of 8 or 9 feet. The fibre is separated by threshing and beating, after the plant, which, at the time of cutting, is tied into convenient bundles for the purposes, has been kept immersed in water several days. The hemp is bought in the bazaar about 7 lbs. per shilling, and rope made of it at 5 lbs. weight for the shilling. The country paper is made from this article.†

3012. [10076] Sunn (*C. juncea*), Lahore.

It is extensively cultivated for its fibre, especially near rivers. Sunn prepared for the native market can be obtained at Lahore for 14*l.* per ton.

3013–4. [5899–5900] Sunn (*C. juncea*), Nepal. Messrs. AHMUTY & Co., Calcutta.

3015. [3810] Brown hemp (*C. juncea*), Gwalior. H.H. the MAHARAJAH.

3016. [553] Sunn (*C. juncea*), Dharwar.

3017. [9412] Sunn, Bolarum. DR. RIDDELL.

3018. [4014] Janapan (*C. juncea*), Salem. H. A. BRETT, Esq.

c. JUBBULPORE HEMP (*Crotalaria tenuifolia*).

3019. [1497] Jubbulpore hemp (*C. tenuifolia*), Jubbulpore.

In forwarding this sample, the JUBBULPORE COMMITTEE appends the following remarks:—

The cultivation of 'hemp' in the district has received considerable impulse of late. Several years ago, Mr. Williams having occasion to send to Calcutta samples of wax, oilseeds, and other materials, filled up the box with indigenous hemp to prevent breakage of the bottles. On arrival at Calcutta, the cleanness and brightness of the fibre struck the consignee, who had it immediately examined by one of the proprietors of the patent Rope-walks, who pronounced it equal to the best Russian hemp, and at once sent an order for 400 maunds of it. The trade has since gradually increased, and Mr. Williams now sends about 6,000 maunds of this fibre annually to Calcutta. The plant is regularly cultivated, but the cultivation is limited. About 10 per cent. of the fibre is lost in the process of heckling, and the cost varies according to the several places in the district and seasons of the year. The price of the prepared fibre is from 3R. 8A. to 4R. per maund. The present means of inland transport is by country carts to Mirzapore, which costs 1R. 8A. per maund, and from thence to Calcutta by boats, at a farther cost of 1R. 4A. to 1R. 8A., which, with other contingencies, such as covering for carts, or guards' hire, duty in native states, and agency charges at Mirzapore, brings up the cost of the material to 7 rupees per maund before it reaches Calcutta. Mirzapore is, at present, the nearest place of export. The great length of time in getting down bulky produce from Central India, and the enormous expense of transport, have hitherto prevented Mr. Williams sending his hemp to England: but all this will be overcome the moment the railway line from Bombay to Jubbulpore opens, when the hemp can be landed at Liverpool in as many days as it now takes weeks by country carts and native boats to convey it from this station to Calcutta, and there is no doubt that in a very few years hemp, and also flax, will become large articles of export from the Saugor and Nerbudda territories.

d. DUNCHEE (*Sesbania aculeata*).

For rope-making purposes, well worthy of attention.

3020. [5903] Dunchee (*S. aculeata*), Nepal? Messrs. AHMUTY & Co., *Calcutta.*

* Central Committee, *Lucknow.*
† Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE* OF HEMP† AND HEMP ROPE† EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61 INCLUSIVE.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		North America		China		Arabian and Persian Gulf		Islands and Shores of the Indian Seas		All Other Places		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	tons	£
1850-51	Bengal	475,440	1,225	..	..	6,608	16	286,160	1,970	4,144	35	..	..	71,456	701	248,752	2,641	1,092,560	488	6,588
	Madras	32,928	132	..	..	..	..	..	..	..	..	8,400	38	..	..	..	..	41,328	18	170
	Bombay	879,312	3,740	..	..	..	..	..	..	..	..	341,824	1,430	..	..	3,584	16	1,224,720	547	5,186
	All India	1,387,680	5,097	..	..	6,608	16	286,160	1,970	4,144	35	350,224	1,468	71,456	701	252,336	2,657	2,358,608	1,053	11,944
1851-52	Bengal	117,376	285	..	..	..	..	996,016	6,592	5,824	50	..	..	103,264	1,024	262,304	2,273	1,484,784	663	10,224
	Madras	388,976	3,490	..	..	..	..	..	..	..	..	1,344	6	..	..	7,728	23	398,048	178	3,519
	Bombay	1,163,120	6,231	..	..	..	..	..	..	..	..	348,880	1,879	..	..	..	..	1,512,000	675	8,110
	All India	1,669,472	10,006	..	..	..	..	996,016	6,592	5,824	50	350,224	1,885	103,264	1,024	270,032	2,296	3,394,832	1,516	21,853
1852-53	Bengal	711,312	1,786	3,024	7	..	..	1,192,464	6,291	11,088	95	8,288	10	268,576	2,479	256,144	2,481	2,450,896	1,094	13,149
	Madras	394,240	1,810	..	..	..	..	672	9	..	..	2,016	9	..	..	448	7	397,376	177	1,835
	Bombay	2,614,640	14,007	..	..	..	..	..	..	..	..	310,128	1,661	..	..	5,600	29	2,930,368	1,308	15,697
	All India	3,720,192	17,603	3,024	7	..	..	1,193,136	6,300	11,088	95	320,432	1,680	268,576	2,479	262,192	2,517	5,778,640	2,579	30,681
1853-54	Bengal	2,695,840	6,864	..	..	..	..	3,076,192	12,202	..	..	2,912	36	681,744	5,582	1,111,488	9,124	7,568,176	3,379	33,808
	Madras	347,312	1,202	224	1	..	..	..	..	..	..	112	1	112	1	..	..	347,760	155	1,205
	Bombay	7,309,568	39,238	..	..	..	..	..	..	..	..	476,244	1,956	..	..	..	..	7,785,792	3,476	41,194
	All India	10,352,720	47,304	224	1	..	..	3,076,192	12,202	..	..	479,248	1,993	681,856	5,583	1,111,488	9,124	15,701,728	7,010	76,207
1854-55	Bengal	5,329,408	13,680	38,080	93	1,568	4	1,623,888	8,825	35,280	496	1,008	12	344,736	3,382	885,136	7,887	8,259,104	3,687	34,379
	Madras	877,184	3,058	..	..	..	..	..	..	..	..	112	1	..	..	1,344	9	878,640	392	3,068
	Bombay	6,230,000	37,767	..	..	94,080	840	..	..	..	..	300,608	2,536	..	..	..	..	6,624,688	2,957	41,143
	All India	12,436,592	54,505	38,080	93	95,648	844	1,623,888	8,825	35,280	496	301,728	2,549	344,736	3,382	886,480	7,896	15,762,432	7,036	78,590
1855-56	Bengal	1,697,696	6,350	116,816	576	13,104	48	1,476,944	8,363	31,696	420	5,040	55	175,056	1,717	215,936	2,431	3,732,288	1,666	19,960
	Madras	528,640	2,446	672	3	..	..	..	..	..	..	7,616	36	..	..	..	..	536,928	239	2,485
	Bombay	3,463,936	30,928	15,344	137	189,056	1,688	..	..	..	..	423,136	3,777	..	..	..	..	4,091,472	1,827	36,530
	All India	5,690,272	39,724	132,832	716	202,160	1,736	1,476,944	8,363	31,696	420	435,792	3,868	175,056	1,717	215,936	2,431	8,360,688	3,732	58,975
1856-57	Bengal	508,144	2,014	..	..	19,824	108	3,288,320	14,088	19,152	227	9,856	119	107,520	1,307	917,952	5,421	4,879,768	2,174	23,284
	Madras	271,152	1,047	33,824	138	2,464	11	..	..	..	..	336	1	..	..	224	1	308,000	138	1,198
	Bombay	2,676,576	23,851	..	..	..	..	..	..	..	..	363,552	3,246	..	..	59,136	528	3,099,264	1,384	27,625
	All India	3,455,872	26,912	33,824	138	22,288	119	3,288,320	14,088	19,152	227	373,744	3,366	107,520	1,307	977,312	5,950	8,278,032	3,696	52,107
1857-58	Bengal	2,054,080	13,662	14,896	118	..	..	1,002,288	7,779	..	..	2,464	30	248,304	2,555	669,088	6,216	3,991,120	1,782	30,360
	Madras	637,840	2,237	3,024	10	6,272	26	..	..	..	..	21,280	95	..	..	29,904	533	698,320	311	2,901
	Bombay	2,894,528	18,094	57,232	255	..	..	2,464	11	..	..	448,784	2,071	..	..	1,792	10	3,404,800	1,520	20,441
	All India	5,586,448	33,993	75,152	383	6,272	26	1,004,752	7,790	..	..	472,528	2,196	248,304	2,555	700,784	6,759	8,094,240	3,613	53,702
1858-59	Bengal	645,120	2,951	29,960	109	..	..	746,228	6,754	..	..	2,520	22	..	..	665,868	7,827	2,089,696	933	17,663
	Madras	117,040	378	..	..	2,240	10	..	..	..	..	36,064	161	..	..	..	..	155,344	69	549
	Bombay	3,753,344	16,757	..	..	..	..	..	..	..	..	719,824	3,212	..	..	..	..	4,473,168	1997	19,969
	All India	4,515,504	20,086	29,960	109	2,240	10	746,228	6,754	..	..	758,408	3,395	..	..	665,868	7,827	6,718,208	2,999	38,181
1859-60	Bengal	503,440	19,929	77,784	2,836	..	..	289,128	25,903	..	..	3,192	353	..	..	468,888	45,803	1,342,432	599	94,804
	Madras	350,112	1,109	21,280	58	..	..	..	..	..	..	3,808	20	..	..	1,232	3	376,432	168	1,190
	Bombay	3,044,608	13,592	87,808	392	..	..	29,456	131	..	..	283,696	1,267	..	..	..	..	3,445,568	1,538	15,382
	All India	3,898,160	34,630	186,872	3,286	..	..	318,584	26,034	..	..	290,696	1,620	..	..	470,120	45,806	5,164,432	2,305	111,376
1860-61	Bengal	372,428	2,781	1,344	8	..	..	205,744	3,190	448	2	..	..	..	..	327,572	4,433	907,536	405	10,414
	Madras	..	..	3,808	43	..	..	..	..	..	..	1,344	10	..	..	..	..	5,152	2	53
	Bombay	1,710,576	7,670	3,248	15	..	..	20,720	92	..	..	413,728	2,162	..	..	14,448	65	2,162,720	965	10,904
	All India	2,083,004	10,451	8,400	65	..	..	226,464	3,282	448	2	415,072	2,172	..	..	342,020	4,498	3,075,408	1,374	20,471

* The Indian rupee is here converted at the exchange of two shillings.

† This is the term used in the returns from India, but it is a misnomer. The 'hemp' here specified is almost entirely the produce of the leguminous plant called 'sunn' (*Crotalaria juncea*), not of the *Cannabis sativa*, or true hemp.

NATIONAL ARCHIVES OF INDIA

e. **JETEE** (*Marsdenia tenacissima*).

3021. [9410] Jetee (*M. tenacissima*), INDIA MUSEUM.

3022. [5954] Kumbhee (*Careya arborea*), Lucknow.

This is a large tree which abounds in mountainous districts. The fibre it affords is coarse, and only applicable for rough cordage. Matches for matchlocks are made from its bark.

3023. [10726] Kavane (*Sterculia urens*), Mangalore. V. P. COELHO, Esq.

3024. [5336] Kavane, Assam. H. L. MICHEL, Esq.

The bark of this, as well as almost every other species of *Sterculia*, affords a strong, but not very handsome fibre, which may be employed for making ropes.

3025. [9402] Kodal, Cuttack.

This substance is the inner bark of a forest tree. It is reported to make the strongest and most durable rope, which is said not to be liable to deteriorate from wet, and hence it is made into boat cables. The specimen was procured from Autgurh, where the fibre is collected for sale on requisition by the Sahars. The tree, which the Committee have not been able to examine, may possibly be the *Sterculia villosa*, which in Assam is called the '*Oadal*,' and the fibres are employed for making ropes with which to secure wild elephants.*

3026. [7757] Scalie, Cuttack.

This is the fibre of a gigantic twining plant, common throughout the forest jungles of the province. It is used in these parts for cordage, and is made into twine for mat-making and roofing purposes.†

IV.—FIBRES FOR MISCELLANEOUS PURPOSES, ADAPTED FOR TWINE, CORDAGE, AND PAPER, OCCASIONALLY CAPABLE OF MANUFACTURE INTO FABRICS SUITED FOR WOMEN'S DRESSES, IMITATION HORSEHAIR CLOTH, ETC.

This division embraces the fibres furnished by the leaves and stems of endogenous plants.

a. **PINE APPLE** (*Ananassa sativa*).

This plant supplies the only fibre of the group which is at all likely to be employed for spinning by machinery. Its fibres are fine and very divisible.

3027. [4886] Pine-apple fibre (*A. sativa*), Chingleput. DR. SHORTT.

The leaves are gathered in the same way as the aloe, and are placed on a piece of board and scraped with a blunt knife. The fibres that are loosened are drawn out, the leaves turned over, and from four to six inches of the stem end scraped as before, and as soon as the fibres are loosened by the removal of the pulp in that part of the leaf, the fibres are taken hold of by the fingers and drawn out. These fibres are again laid on the board, and any remaining portion of the pulp gently scraped out with the aid of water, when they are gathered and dried in the sun.

By another mode of treatment, the leaves are laid in the sun, so as to dry up a portion of the sap, when, on being taken up and bruised by the hand, the fibres become loosened and may be taken hold of, and drawn out. But a great loss of fibre results, so that this method cannot be recommended.

3028. [8138] Pine-apple fibre (*A. sativa*), Bolarum. DR. RIDDELL.

3029. [10720] Pine-apple fibre, Mangalore. V. P. COELHO, Esq.

3030. [10721] Jungle pine-apple, Mangalore. V. P. COELHO, Esq.

3031. [6345] Pine-apple fibre, Malacca. TAN KEM SING.

3032. [6377] Pine-apple fibre, Malacca.

b. **MOORVA, MAROOL, or BOW-STRING HEMP** (*Sanseviera zeylanica*).

This plant supplies a fibre in point of strength and other qualities well calculated, when properly prepared, to compete with the 'Manilla hemp' of the Philippine Islands.

3033. [7784] Moorga or Moorgavee (*S. zeylanica*), Cuttack.

This plant is both indigenous and common in the province, growing alike in low, marshy, shady spots along the coast, as in Balasore, on high gravelly grounds in the interior, and in the jungle in the tributary Mehals. The fibre it yields in this district is only used for the manufacture of bowstring.

The sample of rope (see Class XIX.) was made for the Local Committee by CAPTAIN BOND of Balasore; the leaves are to be had for the collecting. They are, when matured, about two feet long, and each leaf yields from thirty to forty threads. The same tedious process of detaching the thread from the cellular tissue is employed with this as

* Local Committee, *Cuttack.*
† Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

with the Agave leaf, and it would be necessary to introduce a mechanical method of doing so, ere the production could be made profitable on a large scale. The bowstring and sample of fibre were prepared to order in Cuttack: not being a marketable article, no attempt at a specification of price can be made.*

3034. [4009] Munjum (*S. zeylanica*), Salem. H. A. BRETT, Esq.

3035. [4887] Bowstring hemp (*S. zeylanica*), Chingleput. DR. SHORTT.

3036. [8140] Bowstring hemp. DR. RIDDELL.

3037. [2734] Munjee (*S. zeylanica*), Bangalore. DR. KIRKPATRICK.

3038. [4844] Marool (*S. zeylanica*), Madras. DR. SHORTT.

3039. [4851] Tow of *Sanseviera cylindrica*, Do. DR. HUNTER.

c. **AGAVE† or ALOE FIBRES** (*Agave americana*, also *Agave vivipara* or *Fourcroya gigantea.*)

Although neither of these plants is indigenous, both are now cultivated in many parts of the country. A variety of specimens have been forwarded for exhibition. After suitable preparation, the agave fibre is usually employed for the manufacture, amongst other things, of an imitation 'horsehair' cloth.

3040. [4884] Aloe (*A. americana*), Chingleput. DR. SHORTT.

3041. [4879] Great aloe (*F. gigantea*), Chingleput. DR. SHORTT.

The leaves, cut close to the stem, are placed on a piece of board, and beaten with a short stout stick. After being thus bruised, the pulpy portions are scraped out with a blunt knife, and the fibres subsequently washed in clean water and dried in the sun.

3042. [9405] 'Hatteecheeghar' (*F. gigantea*), Lucknow.

Planted in hedges, and grows luxuriantly without any further cultivation. The extent of present cultivation is very limited, but it is capable of being extended all over Oude, and in any soil. The fibre has been prepared only on a small scale. In the Lucknow jail rope and sackcloth *have been made of it.*‡

3043. [4845] Agave (*Agave americana*), Madras. DR. HUNTER.

3044. [2725] Kathâli, long aloe, Bangalore. DR. KIRKPATRICK.

3045. [2726] Chicca Kathâli, short aloe, Bangalore. DR. KIRKPATRICK.

3046. [10727] Wild aloe (*Aloe indica*), Mangalore. V. P. COELHO, Esq.

3047. [8126] Aloe (*Agave americana*). DR. RIDDELL.

3048. [8140] Aloe fibre dressed. DR. RIDDELL.

3049. [8127] Aloe fibre dyed in colours. DR. RIDDELL.

3050. [8128] Aloe fibre, Madras.

3051. [554] Agave, Dharwar.

3052-3 [6483] Aloe fibre (*Agave americana*), Chota Nagpore.

3054. [9406] Aloe fibre, Agra.

3055. [10306] Aloe fibre, dyed and undyed, Bareilly.

3056. [8144] Specimens of Agave fibre dyed and prepared. W. STAUFEN, Esq.

3057. [8144A.] Brush manufactured from do. Do.

By process originally patented in this country by Exhibitor.

d. **ADAM'S NEEDLE** (*Yucca gloriosa*).

This plant, although not yet cultivated for economic purposes, produces fibre of very considerable value when properly prepared.

3058. [4841] Adam's needle (*Y. gloriosa*), Chingleput. DR. SHORTT.

3059. [9407] Adam's needle (*do.*), Chingleput. DR. RIDDELL.

3060. [2733] Howah Kathâli (*do.*), Bangalore. DR. KIRKPATRICK.

3061. [8141] Adam's needle (*Y. angustifolia*), Madras. DR. HUNTER.

* Local Committee, *Cuttack.*

† Misnamed aloe, but having now become the 'trade' term, it is likely to be retained.

‡ Central Committee, *Lucknow.*

NATIONAL ARCHIVES OF INDIA

e. **PLANTAIN** (*Musa paradisiaca*).

Universally cultivated for its fruit. Its leaves afford a fibre suited for certain purposes. Ordinarily it is inferior to Manilla hemp (*Musa textilis*) in point of strength.

3062. [5901] Plantain (*M. paradisiaca*), Nepaul. Messrs. AHMUTY & Co., Calcutta.

3063. [4889] Plantain, Chingleput. DR. SHORTT.

These fibres were prepared from the inner footstalks of the plantain tree. These were taken of certain length, placed on a piece of board, and the pulpy mass scraped out with a blunt knife. Both sides of the stalks having been thus scraped, whilst clean water was poured on to wash away the remains of the pulp, the fibres were dried in the sun.

3064. [9408] Plantain, Bolarum. DR. RIDDELL.

3065. [4846] Manilla hemp (*M. textilis*), Madras. DR. HUNTER.

3066. [4849] Plantain (*M. paradisiaca*), Do. Do.

3067. [4889] Plantain, Madras. DR. SHORTT.

3068. [10728] Red plantain (*M. Cavendishii*), Mangalore. V. P. COELHO, Esq.

3069. [10725] Jungle plantain (*M. superba*), Mangalore. V. P. COELHO, Esq.

3070. [10722] Plantain (*M. paradisiaca*), Mangalore. V. P. COELHO, Esq.

3071. [9176] Plantain, Vizagapatam. H. H. the RAJAH.

3072. [8129] Plantain, Singapore. Hon. COL. CAVANAGH.

f. **SCREW-PINE** (*Pandanus odoratissimus.*)

The leaves of this plant furnish a fibre which can be turned to account for the manufacture of paper and some common purposes. It is, however, in every respect inferior to those in this group above entered.

3073. [4856] Screw pine (*P. odoratissimus*), Chingleput. DR. SHORTT.

3074. [8146] Screw pine (*P. odoratissimus*), Madras. DR. HUNTER.

Prepared like the pine-apple, but no water should be used, simple scraping, after which the fibres are put to dry.

V.—FIBRES SUITED FOR THE MANUFACTURE OF MATS, BRUSHES, COARSE CORDAGE, IMITATION HORSE-HAIR FOR STUFFING PURPOSES, ETC.

a. **COIR.**

This well-known material is furnished by the fibrous envelope of the nut of the cocoa palm (*Cocos nucifera*). It is exported from India in considerable quantities, as will be gathered from the table (p. 150), which indicates the amount of coir and coir-rope supplied from India and each Presidency to all parts of the world from 1850–1 to 1860–1 inclusive.

3075. [4874] Coir (*Cocos nucifera*), Chingleput. DR. SHORTT.

3076. [453] Coir, Madras. DR. MCPHERSON.

3077. [2728] Coir, Bangalore. DR. KIRKPATRICK.

The outer rind of the nut is taken, bruised, and steeped in water for two or three days, when it is taken up and the fibres separated by the fingers and scraped gently with a blunt knife, and dried in the sun. If steeped in water too long, they get dark coloured.

b. **GOMUTI** (*Arenga saccharifera*).

This fibre is considered superior to all others yet made use of for the manufacture of artificial bristles for brushes, imitation horse-hair for stuffing, and such like purposes.

3078. [6349] Gomuti (*A. saccharifera*), Singapore. COL. COLLYER.

3079-80. [4091-2] Ejow (*A. saccharifera*), Province Wellesley.

3081. [8143] Ejow (*A. saccharifera*), dyed and prepared for use as brush bristles, &c. (patented). W. STAUFEN, Esq.

3082. [8143] Hair-brush manufactured from the above. W. STAUFEN, Esq.

NATIONAL ARCHIVES OF INDIA

c. **MOONJ** (*Saccharum Munja*).

This grass supplies a strong good fibre, which is beginning to attract attention in this country, and is now being exported from Kurachi in Sinde.

3083. [10242] Moonj (stems) (*Saccharum Munja*), Lahore.

3084. [10240] Moonj, in raw state, Lahore.

3085. [10241] Moonj, in that of fibre, Lahore.

Used for rope-making. The outer cuticle of the grass called *Sirki* (*Saccharum Moonja*). It is largely used for well ropes, tow lines, and for attaching buckets to Persian wheels, and in all cases where the rope is exposed to the action of water. Price, at present, from 5*l.* to 8*l.* per ton, but it can ordinarily be obtained much cheaper.*

3086–8. [5920-2] Moonj in state of fibre, Lucknow.

Grows wild all over Oude, and is planted in hedges. The moonj or fibre is prepared from the vagina of the leaf just when the stem begins to bear flower; ropes for towing boats on rivers, and twine for bottoms of charpoys (bedsteads), are made from this fibre. If it is not occasionally wetted, and allowed to become too dry, it easily *breaks when used.* The prepared fibre costs two rupees per maund.*

3089. [595] Bunkuss. Lucknow.

3089A. [10243] Dab grass. Lahore.

3089B. [4873] Palmyra (*Borassus flabelliformis,*) Chingleput. DR. SHORTT.

3090. [4010] Palmyra, Salem. H. A. BRETT, Esq.

Series of Mat-making Materials, exhibited by DR. SHORTT, *Chingleput.*

3091. [4864] Screw-pine leaves (*Pandanus odoratissimus*).

Used also to cover umbrellas.

3092. [4858] Mat-grass (*Cyperus textilis*).

3093. [†] Bulrush (*Typha elephantina*).

3094. [4882] Palmyra leaves (*Borassus flabelliformis*).

Used also for native books.

3095. [4865] Date leaves (*Phœnix dactylifera*).

3096. [4860] Cocoa-nut leaves (*Cocos nucifera*).

3097. [5118] Vittivayr (*Andropogon muricatum*).

Used for thatching houses. Roots employed as cuscus tats (air coolers).

3098. [4875] Mat-grass (*Typha angustifolia*).

Materials for Baskets, Brooms, &c., exhibited by DR. SHORTT, *of Chingleput.*

3099. [4860] Midrib of leaves of *Cocos nucifera.*

3100. [4867] Basket material (*Vitex negundo*).

3101. [4870] Basket material (*Terreola buxifolia*).

3102. [4868] *Elate sylvestris.*

3103. [4869] Cacha codie.

Stems of a creeper used for tying bundles and other purposes instead of twine.

3104–7. [4080–78–90–89] Mandrong rushes, Province Wellesley.

The Mandrong rush grows spontaneously in the rice fields of Province Wellesley, after the crop has been gathered, and overspreads them like a second crop. The fibre is strong, and is locally used in the manufacture of rice and sugar bags, mats, &c. Experiment may prove it to be adapted for the manufacture of paper.*

3108. [4086] Mangkwang (*Pandanus* sp.) for matting, Province Wellesley.

3109. [6711] Glam tree bark (*Melaleuca viridiflora*), Malacca. G. ANGUS, Esq.

3110. [6347] Talee trap (*Artocarpus* sp.) for fishing nets, Kassang.

3111. [6347] Talee Taras, Singapore. JOSE D'ALMEIDA, Esq.

3112. [6348] Bark used as twine, Siam. JOSE D'ALMEIDA, Esq.

---

* Central Committee, *Lahore.*

† Central Committee, *Lucknow.*

* Local Committee, *Penang.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND VALUE* OF COIR AND COIR ROPE EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850-51 TO 1860-61 INCLUSIVE.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED																TOTAL EXPORTED TO ALL PARTS		
		UNITED KINGDOM		FRANCE		OTHER PARTS OF EUROPE		NORTH AMERICA		CHINA		ARABIAN AND PERSIAN GULF		ISLANDS AND SHORES OF THE INDIAN SEAS		ALL OTHER PLACES				
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	£	lbs.	*tons*	£
1850-51	Bengal	32,704	212	..	..	..	..	52,528	498	10,416	126	..	..	1,008	10	56,000	475	152,656	68	1,321
	Madras	1,745,072	3,258	88,816	182	..	..	..	..	..	..	681,856	1,767	10,304	19	539,280	1,179	3,065,328	1,369	6,405
	Bombay	4,196,304	12,751	..	..	..	..	97,552	166	..	..	247,968	735	..	..	86,912	266	4,628,736	2,066	13,918
	ALL INDIA	5,974,080	16,221	88,816	182	..	..	150,080	664	10,416	126	929,824	2,502	11,312	29	682,192	1,920	7,846,720	3,503	21,644
1851-52	Bengal	..	..	..	..	..	..	..	..	5,488	68	..	..	..	..	35,952	328	41,440	18	396
	Madras	2,707,824	5,097	59,472	122	..	..	113,904	310	..	..	810,096	1,974	..	..	372,960	834	4,064,256	1,814	8,337
	Bombay	896,896	3,610	..	..	..	..	124,880	558	6,944	31	291,424	1,290	18,480	83	94,192	394	1,432,816	640	5,966
	ALL INDIA	3,604,720	8,707	59,472	122	..	..	238,784	868	12,432	99	1,101,520	3,264	18,480	83	503,104	1,556	5,538,512	2,472	14,699
1852-53	Bengal	11,200	68	..	..	..	..	5,264	25	5,264	26	..	..	..	..	896	7	22,624	10	126
	Madras	3,270,400	5,722	9,408	23	..	..	61,600	137	25,312	70	927,360	3,688	31,808	101	310,688	944	4,636,576	2,070	10,685
	Bombay	1,277,248	4,055	..	..	..	..	..	..	22,064	98	426,384	1,776	20,160	93	106,288	467	1,852,144	827	6,489
	ALL INDIA	4,558,848	9,845	9,408	23	..	..	66,864	162	52,640	194	1,353,744	5,464	51,968	194	417,872	1,418	6,511,344	2,907	17,300
1853-54	Bengal	3,808	48	..	..	..	..	107,408	691	26,656	360	..	..	21,728	229	13,776	159	173,376	77	1,487
	Madras	4,734,912	8,928	14,672	27	141,568	247	..	..	12,992	36	841,232	2,000	11,200	77	345,744	1,243	6,102,320	2,724	12,558
	Bombay	2,499,056	9,079	169,792	569	..	..	..	..	..	..	907,888	1,277	..	..	185,024	671	3,161,760	1,412	11,596
	ALL INDIA	7,237,776	18,055	184,464	596	141,568	247	107,408	691	39,648	396	1,149,120	3,277	32,928	306	544,544	2,073	9,437,456	4,213	25,641
1854-55	Bengal	119,840	1,524	..	..	..	..	74,704	460	14,784	90	..	..	..	..	248,864	2,107	458,192	205	4,181
	Madras	3,899,616	9,268	10,752	20	79,744	132	..	..	..	..	660,016	1,787	..	..	730,576	3,227	5,380,704	2,402	14,434
	Bombay	1,918,784	6,532	66,528	277	..	..	136,640	607	9,184	41	12,768	557	..	..	95,760	409	2,239,664	999	8,423
	ALL INDIA	5,938,240	17,324	77,280	297	79,744	132	211,344	1,067	23,968	131	672,784	2,344	..	..	1,075,200	5,743	8,078,560	3,606	27,038
1855-56	Bengal	9,072	66	..	..	..	..	34,720	321	28,560	267	336	4	71,120	713	75,376	618	219,184	98	1,989
	Madras	1,875,328	4,549	21,280	39	142,016	359	74,032	444	..	..	512,288	1,464	66,976	223	658,336	4,105	3,350,256	1,496	11,183
	Bombay	1,498,112	6,251	..	..	..	..	..	..	42,448	178	180,208	1,037	1,008	4	67,648	277	1,789,424	799	7,747
	ALL INDIA	3,382,512	10,866	21,280	39	142,016	359	108,752	765	71,008	445	692,832	2,505	139,104	940	801,360	5,000	5,358,864	2,393	20,919
1856-57	Bengal	70,672	601	55,664	474	..	..	1,568	13	11,984	102	..	..	38,304	327	172,928	1,470	351,120	157	2,987
	Madras	2,210,768	4,703	17,360	31	195,776	494	158,480	436	8,064	22	474,320	1,168	..	..	1,581,104	3,768	4,645,872	2,074	10,622
	Bombay	2,784,656	9,961	..	..	..	..	..	..	64,512	288	277,872	1,214	61,376	274	108,304	482	3,296,720	1,472	12,219
	ALL INDIA	5,066,096	15,265	73,024	505	195,776	494	160,048	449	84,560	412	752,192	2,382	99,680	601	1,862,336	5,720	8,293,712	3,703	25,828
1857-58	Bengal	..	..	7,056	76	..	..	163,520	1,216	2,016	17	..	..	35,056	283	18,928	257	226,576	101	1,849
	Madras	3,327,744	6,729	50,064	133	169,456	415	..	..	..	..	520,128	1,254	..	..	706,944	1,968	4,774,336	2,131	10,499
	Bombay	4,170,880	18,756	..	..	10,864	39	87,584	370	..	..	192,880	984	80,192	400	57,792	284	4,602,192	2,055	20,833
	ALL INDIA	7,498,624	25,485	57,120	209	180,320	454	251,104	1,586	2,016	17	715,008	2,238	115,248	683	783,664	2,509	9,603,104	4,287	33,181
1858-59	Bengal	100,408	1,220	3,528	30	..	..	212,110	1,943	448	11	..	..	..	..	186,050	1,669	502,544	224	4,873
	Madras	3,715,600	7,503	3,472	7	70,000	157	315,952	599	..	..	562,464	1,384	..	..	953,120	2,212	5,620,608	2,509	11,862
	Bombay	3,306,240	15,799	..	..	..	..	316,288	1,358	..	..	232,176	1,174	..	..	272,944	1,369	4,127,648	1,842	19,700
	ALL INDIA	7,122,248	24,522	7,000	37	70,000	157	844,350	3,900	448	11	794,640	2,558	..	..	1,412,114	5,250	10,250,800	4,575	36,435
1859-60	Bengal	2,268	253	..	..	..	..	1,876	164	..	..	..	..	..	..	108,500	8,359	112,644	50	8,776
	Madras	5,192,320	9,644	3,920	6	39,200	222	..	..	..	..	448,336	1,092	..	..	441,504	939	6,125,280	2,734	11,903
	Bombay	4,167,856	18,602	..	..	..	..	224,224	998	2,800	15	82,992	437	..	..	93,184	470	4,571,056	2,041	20,522
	ALL INDIA	9,362,444	28,499	3,920	6	39,200	222	226,100	1,162	2,800	15	531,328	1,529	..	..	643,188	9,768	10,808,980	4,825	41,201
1860-61	Bengal	1,036	9	..	..	..	..	..	..	..	..	..	..	..	..	49,000	478	50,026	22	487
	Madras	6,353,872	22,574	54,992	212	106,400	396	..	..	..	..	680,848	2,612	..	..	1,440,128	4,162	8,626,240	3,851	29,956
	Bombay	3,573,808	21,314	..	..	..	..	255,584	1,333	7,840	42	329,392	2,550	..	..	221,760	1,602	4,388,384	1,959	26,841
	ALL INDIA	9,928,716	43,897	54,992	212	106,400	396	255,584	1,333	7,840	42	1,010,240	5,162	..	..	1,710,888	6,242	13,064,660	5,832	57,284

* The Indian rupee is here converted at the exchange of two shillings.

NATIONAL ARCHIVES OF INDIA

3113. [3157] Reeds and grasses from Darjeeling. DR. CAMPBELL.

Basts from Akyab and Burmah.

3114. [9374] Heng-kyo Shaw, Akyab.

3115. [7786] Dam Shaw, Akyab.

3116. [7602] Thanot Shaw, Akyab.

3117. [7601] Wapreeloo Shaw, Akyab.

3118. [7789] Shaw Goung, Akyab.

The above are used in preparing cordage for boats, nets, &c.: wholesale market price, 2R. 8A. per maund. The inner bark of large trees.

3119. [9375] Shaw Nee, Akyab.

3120. [7788] Shaw Phru, Akyab.

3121. [7600] Thengban Shaw, Akyab.

The above are used in preparing cordage for boats, nets, &c.: wholesale market price, 1R. 12A. per maund. More plentiful than those above.

3122. [7603] Guand-young Shaw, Akyab.

Used for cables and strong nets: wholesale market price, 3R. 4A. per maund.

The whole of these fibres are used much by the inhabitants of the province.*

3123. [5788] Inner bark of *Sterculia*, Thatpootnet Shaw, Burmah.

3124. [5789] Inner bark of *Sterculia*, Shaw Laybway, Burmah.

3125. [5790] Inner bark of *Sterculia*, Shaw Nee, Burmah.

The above are extensively used for making ropes.

These fibres, or basts, appear to be the inner barks of various species of *Sterculia* and allied plants, which abound in the districts from whence they are forwarded. They are strong and enduring in their nature, and some of them have been tested with satisfactory results, but they are coarse and ill-prepared, so that in their present condition they would scarcely command a price in the English markets. No information has been afforded of the plants from whence they have been obtained.

Miscellaneous Fibres, exhibited with the native names only, and without definite information.

3126. [2729] Dudi.

3127. [2730] Pundi.

3128. [9177] Jillado.

3129. [9178] Sagao.

3130. [9179] Udda.

3131. [9180] Mogally.

3132. [9182] Urasa (*Ananassa* sp.)

The above are contributed by DR. J. KIRKPATRICK, Bangalore, Mysore.

3133. [10707] Shreetaly.

3134. [10708] Daddal.

3135. [10709] Daddas.

3136. [10710] Kappace.

3137. [10711] Nareeta Bally.

3138. [10712] Haralley.

3139. [10714] Purelley.

3140. [10715] Vatta.

3141. [10716] Kalley.

3142. [10717] Basarry.

3143. [10719] Mut'alla.

3144. [10721] Jungle apple.

3145. [10713] Banyan (*Ficus*).

3146. [10718] Kinni golly (*do.*).

The above-named specimens 3133—3146, are exhibited by V. P. COELHO, Esq., Mangalore, Madras.

RATTANS AND CANES.

The Table on page 152 shows the value of the rattans and canes exported from India during the last four years.

3146A. [5175] Specimen of cane used for thatching houses, Akyab. GOVERNMENT of INDIA.

3146B. [3157] Rattans, Darjeeling. DR. CAMPBELL.

Subdivision C.—v. CELLULAR SUBSTANCES.

This subdivision has only two representatives.

3147. [10161] Sago palm tinder, Luckimpore, Assam. H. S. BIVAR, Esq.

3148. [9409] Palm tinder, Malacca. DR. MCPHERSON, Madras.

* Local Committee, *Akyab.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE VALUE OF RATTANS AND CANES EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857-58 TO 1860-61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED							TOTAL EXPORTED TO ALL PARTS
		UNITED KINGDOM	FRANCE	OTHER PARTS OF EUROPE	AMERICA	CHINA	ARABIAN AND PERSIAN GULFS	OTHER PARTS*	
		Value	Value	Value	Value	Value	Value	Value	Value
		£	£	£	£	£	£	£	£
1857-58	Bengal	2,179	622	158	20	..	..	232	3,211
	Madras	..	..	..	..	..	..	..	..
	Bombay	164	..	..	76	266	..	36	542
	ALL INDIA	2,343	622	158	96	266	..	268	3,753
1858-59	Bengal	923	1,113	60	255	22	..	270	2,643
	Madras	..	..	..	..	..	4	7	11
	Bombay	923	729	..	97	22	14	100	1,885
	ALL INDIA	1,846	1,842	60	352	44	18	377	4,539
1859-60	Bengal	884	547	204	28	..	151	431	2,245
	Madras	..	..	..	..	..	17	11	28
	Bombay	51	490	..	..	..	..	14	555
	ALL INDIA	935	1,037	204	28	..	168	456	2,828
1860-61	Bengal	701	91	..	..	..	..	1,062	1,854
	Madras	..	..	..	..	..	24	6	30
	Bombay	98	431	..	81	..	..	6	616
	ALL INDIA	799	522	..	81	..	24	1,074	2,500

* The greater part exported to the Cape of Good Hope, Mauritius, and New South Wales.

Subdivision C.—vi. TIMBER AND FANCY WOODS USED FOR CONSTRUCTION AND ORNAMENT, AND PREPARED FOR DYEING.

The collection of woods is particularly valuable, on account of the accuracy with which the majority of the samples have been named. Although some progress has been made since 1851, the adaptation of many of these woods is still but imperfectly known. Experiments* and observations have, however, been commenced with the view of testing the strength and other qualities of those forwarded to the present Exhibition, which, when completed, will afford the means of judging of their relative value as compared with the woods of this and other countries, and so far assist in determining to what extent they are likely to prove worthy of attention for export.†

Various specimens of timbers, forming portions of the collections from Lucknow, Midnapore, Chota Nagpore, Umritsur, Cuttack, Jubbulpore, Akyab—from Dr. Campbell, Darjeeling; Dr. Graham, Moulmein; Dr. Brandis, British Burmah; Col. Reid and Lieut. Phaire, Assam; Drs. Hunter and Shortt, Madras—and from H. H. Inche Wan Aboo Bakar, Hon. Col. Cavanagh, G. Angus, Esq., Col. Collyer, C. Evans, Esq., and Hon. Major Man, Malayan Peninsula and Singapore—have, for want of space and other reasons, been deposited at the India Museum. The whole have, however, been carefully gone over, and the more promising ones selected for experiment, &c.

* By CAPTAIN FOWKE.

† The result of these experiments, as well as the skilled opinion of others practically acquainted with the subject, will be embraced in my general report on the Indian products and manufactures exhibited on the present occasion, now in course of preparation.—J. F. W.

WOODS FROM CUTTACK.

Exhibited by T. W. ARMSTRONG, Superintending-Engineer of the Cuttack Division.

3149. [5600] Sissoo, black (*Dalbergia Sissoo*), ·875 sp. gr. 1*s.* per cubic ft.

3150. [5606] Sissoo, red (*D. Sissoo*), 1·000 sp. gr., 1*s.* per cubic ft.

Used for every description of furniture, both by natives and Europeans. In grain and colour it somewhat resembles rosewood. The heart of this timber is generally unsound.

3151. [5610] Koozoom, 1·286 sp. gr., 7½*d.* per cubic ft.

Used for the handles of tools, and native cart axles, and might be applied to other purposes.

NATIONAL ARCHIVES OF INDIA

3152. [5599] Teak, 'Sagoon' (*Tectona grandis*), ·875 sp. gr., 1*s.* 3*d.* per cubic ft.

To what extent this valuable timber exists in the Sumbulpore district and its dependencies, and some of the tributary Mehals of Cuttack, has never been certainly ascertained, but is a question well worthy of careful enquiry.

3153. [5608] Koozoom, ·714 sp. gr., 6*d.* per cubic ft.

Used for ordinary purposes, such as packing-cases, common doors, &c.

3154. [5597] Guringa, ·714 sp. gr., 9*d.* per cubic ft.

A light wood, principally used by the turners of Cuttack, and for palankeen poles, &c.—purposes where lightness is a necessity.

3155. [5598] Sâl (*Shorea robusta*), 1·000 sp. gr., 1*s.* per cubic ft.

Common in our jungles; large quantities are floated down the river Mahanuddy, and sold at Cuttack. By the natives it is used for almost every purpose to which wood can be applied—young trees being cut down even for fuel and palings. A good supply used, some years ago, to be obtained from the jungles skirting the principal waterways of the district, for the Government gun manufactory in the Madras Presidency. In mature trees the heart is always unsound. Temporary bridges, gun-carriages, boats, beams, door-frames, trusses, &c., are generally made of this wood.

3156. [5605] Jack, 'Punsee' (*Artocarpus integrifolia*), ·750 sp. gr., 1*s.* per cubic ft.

Wood of which the native oil-mill or 'ghana' is made. It is also a handsome wood for furniture purposes, having a neat fresh appearance, which darkens with age. As a timber tree, however, it cannot be said to be plentiful, as it is not a forest tree, and the fruit it yields renders it more valuable than if it were simply cultivated for the sake of the timber.

3157. [5607] Peasal (*Buchanania latifolia*), ·875 sp. gr., 9*d.* per cubic ft.

This useful wood is worked up generally into furniture, house doors and windows, presses, tables, &c. It requires to be polished, otherwise it stains a burnt sienna colour any cloth brought into contact with it.

3158. [5601] Burdur, 1·000 sp. gr., 1*s.* per cubic ft.

Excellent wood for carriage poles, shafts, and wheels, and in all coach-builder's work.

3159. [5609] Keehar, 1·250 sp. gr., 9*d.* per cubic ft.

A hard useful wood for mallets, pounders, rammers, and such like articles, and would, perhaps, make up strong furniture.

3160. [5604] Gumbaree.

The trees which furnish these timbers are found more or less plentifully throughout the forest jungles of the Sumbulpore district, and on the banks of the Mahanuddy, Brahming, and Byturg rivers. The main difficulty attending timber transactions is the, at present, almost insurmountable one of conveying the timber from the spot where it is felled (which, of course, is for the most part in the interior of the dense forest) to the nearest spot whence water-carriage is available. Teams of buffaloes are employed for this purpose, in the present mode of operating; but if the distance to be traversed is at all considerable, it may easily be conceived that this method becomes so expensive and dilatory that much cannot be undertaken. The only means of modifying or evading this difficulty, if it were desired to embark in any extensive transactions, would apparently be to have the timber sawn and cut up on the spot, and roughly shaped for the purposes for which it might be required. Planks and sleepers, for example, or the various constituent portions of a gun-carriage, might perhaps, with advantage, be roughly shaped and cut on the spot. For the transport of timber there are, however, some facilities, which it may be proper to notice. The timber country of this division is traversed by three large streams — the Mahanuddy, Brahming, and Byturnee; so that when the united difficulty of getting the wood from the forest to the water-side has been overcome, it is a matter of ease, at the proper season, to float it down in rafts to any depôt which might be established for the purpose at the mouths of the rivers, or others connected with them. From Cuttack to False Point harbour is a distance of 65 miles, *viâ* the Mahanuddy. This harbour affords a safe anchorage for vessels at all seasons, and the route is available for about five months in the year, namely, from the middle of June generally to the middle of November; while from a point on the route, 42 miles from Cuttack, at Tadânda, namely, on to the sea, the river is navigable all the year round. Another route from Cuttack is *viâ* the Beeroopa and Brahming to the Dhamree harbour, the distance being 96 miles, and the Dhamree port safe for sailing vessels from November to February. Small steamers could ply to the harbour all the year round, and vessels of 150 to 200 tons can clear the bar. But this route from Cuttack is an uncertain one, and not open for more than three and a half months in the height of the monsoon, that is, it may be said, from July to September.*

3161. [5603] Assân (*Terminalia tomentosa*), 9*d.* per cubic ft.

3162. [5602] Abloos or Kândoo (*Diospyros melanoxylon*), 1*s.* 6*d.* per cubic ft.

A very handsome fancy wood.

WOODS FROM JUBBULPORE.

3163. [4657] Seba Sagoon Teak (*Tectona grandis*).

This is called by the natives 'Oil Teak,' or 'Seba Sagoon,' and is found on the Bindhyers, north of the Nerbudda, almost exclusively, and is the best in these provinces.

3164. [4658] Putteereea Sagoon. *Do.*

Called by the natives 'Putteereea Sagoon,' or 'Stony Teak;' is shorter and more knotty than the last; is found in the more hilly tracts.

* Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

3165. [4659] Doodheea Sagoon (*Tectona grandis*).

Called by the natives 'Doodheea Sagoon,' or 'Milky Teak;' is the softest timber of the three, and is found chiefly south of the Nerbudda, on the Satpoora. The only difference in the above three woods is the soil they grow on.

3166. [4660] Surrye (*Shorea robusta*).

Found chiefly in large forests in the south Mundlah, and one forest near the Puchmurries.

3167. [4661] Jiomrassee (botanical name not known).

Is a beautiful close-grained wood, the leaf oblong, and serrated edge; it is found in the more hilly tracts, but does not attain any great size.

3168. [4662] Dhengun (*Cordia Macleoda*).

A remarkably beautiful wood, found in Mundlah, Seonee.

3169. [4663] Saj (*Terminalia arguna*).

Very useful for beams and rafters; grows abundantly in all the districts to a great size, 40 to 50 feet long, and 2 to 3 feet broad; will not last if exposed to the weather.

3170. [4664] Beejah (*Pterocarpus* sp.).

An excellent wood, easily worked, grows to a large size, is found in all parts, but not very abundant.

3171. [4665] Kowah (*Terminalia arguna*).

Grows to a large size along the banks of rivers, all over the district; is an excellent lasting timber, somewhat similar in quality to ash.

3172. [4666] Ghattoo (*Zizyphus zylopyxa* or *glabra*).

It grows to a fine large tree, but is a scarce wood, and close-grained and excellent.

3173. [4667] Trosum (botanical name not known).

Good timber, but does not exist in any quantity.

3174. [4668] Dhowrah (*Conocarpus latifolius*).

A tough knotty wood, hard to work, grows abundantly everywhere; used much for cart axles.

3175. [4669] Serlee (*Boswellia thurifera*).

Very abundant, but is soft, and has a bad character for lasting.

3176. [4670] Bher (*Zizyphus jujuba*).

Is abundant, but not often found of large size. Timber inferior as to transverse, but otherwise good.

3177. [4671] Baubul (*Acacia arabica*).

A close-grained, hard, and tough wood, but does not attain any great size; very valuable for the spokes and felloes of wheels.

3178. [4672] Khumee (botanical name not known).

Is a light, strong, and easily-worked wood, much in request by natives.

3179. [3947] Gunjah (botanical name not known).

The same as the foregoing specimens of wood.

3180. [3948] Siris (*Acacia sirisa*).

A splendid timber, but now very scarce in these parts.

3181. [3949] Hurdoo (*Nauclea cordifolia*).

Abundant, and much in request; is light and easily worked. Its strength is not great, but it is lasting, if not exposed to the weather.

3182. [3950] Kaim (*N. parvifolia*).

Somewhat similar to Hurdoo, but is a stronger, better timber.

3183. [3951] Pindra (*N. orientalis*).

Not abundant. A good joiner's wood.

3184. [3952] Jymungul.

A large tree, not of much use.

3185. [3953] Rohnee (*Acacia leucoploca?*)

An excellent and tough wood, but does not work smoothly. Abundant in the Deinwah valley and Hossingabad.

3186. [3954] Londya.

A common wood, suited for poles.

3187. [3955] Kardahee (*Conocarpus mystifolium*).

A tough wood, but difficult to work; tolerably abundant (similar to Dowrah); grows along the banks of the Nerbudda.

3188. [3956] Taman (*Eugenia jambolana*).

A coarse-grained wood, used for well-steps, and in other wet places, where it is almost indestructible.

NATIONAL ARCHIVES OF INDIA

3189. [3957] Tine or Sissoo (*Dalbergia Sissoo*).

A splendid timber, but not abundant; small in this part of India.

3190. [3958] Pandur.

A coarse wood, common, and is a good, strong, and lasting timber.

3191. [3959] Kumbee (*Careya arborea*).

The wood is not much used; the bark is made into slow matches for matchlocks.

3192. [3960] Hurrah.

Is abundant in the hilly tracts, but attains no great size.

3193. [3961] Mowah (*Bassia longifolia*).

This tree is so valuable for its fruit, out of which arrack is made, that it is seldom felled, except when barren; but its wood is excellent.

3194. [3962] Tendoo (*Diospyrosebenum*).

The heart-wood of the tendoo; it is found to a large size in the Seonee district, but generally small elsewhere.

3195. [1214] Doodhee (*Asclepias rosea*).

An inferior timber of no transverse strength.

3196. [1215] Karee (*Uvaria*).

Used by natives for making toys.

3197. [1216] Damin (*Grewia tiliafolia*).

Not abundant, and now very difficult to procure of any size.

3198. [1217] Sissoo (*Dalbergia latifolia*).

A very strong and useful timber.

3199. [1218] Gurraree (*Acacia procera*).

3200. [1219] Toon (*Cedrela Toona*).

3201. [1220] Unjun (*Hardwickia binata*).

Of the woods from Assam forwarded by COL. REID, the following are exhibited:*—

3202. [5273] Nahori (*Mesua ferrea*), Assam.

3203. [9001] Ajar or Jarool (*Lagerstrœmia regina*).

3204. [9002] Saum (*Artocarpus*).

3205. [9003] Kantal (*A. integrifolia*).

3206. [9004] Poma (*Cedrela Toona*).

3207. [9005] Gomari (*Gmelia arborea*).

3208. [9009] Gondhosoroi (*Laurus Sassafras*).

3209. [9010] Uriam (*Andrachne trifoliata*).

3210. [9011] Bheh (*Salix tetraspermum*).

3211. [9012] Reghu (*Nauclea cadamba*).

3212. [9013] Hilikha (*Terminalia citrina*).

3213. [9015] Bual (*Ehretica serrata*).

3214. [9016] Aum (*Mangifera indica*).

3215. [9017] Teham (*Artocarpus*).

3216. [9018] Joba Hingoru (*Quercus*).

3217. [5272] Sissoo (*Dalbergia*).

3218. [9019] Koroi (*Acacia*).

WOODS FROM DARJEELING.

Contributed by DR. A. CAMPBELL.

3219. [7235] Horcul timber.

3220. [7236] Kerhoola.

3221. [7237] Roobes.

3222. [1779] Cospie.

3223. [1769] Kuttoos (chesnut).

3224. [1770] Tacar (*Chelonia*).

3225. [1771] Toon (*Cedrela Toona*).

3226. [1772] Chump (*Magnolia*).

3227. [1752] Keranee.

3228. [1751] Boheeleear.

* The remainder of COL. REID'S collection, along with some specimens presented by LIEUT. W. PHAIRE, for which space could not be found, and to which the native names only have been attached, have been deposited at the India Museum for further reference.

NATIONAL ARCHIVES OF INDIA

WOODS FROM CHOTA NAGPORE.

A numerous collection, embracing some good specimens, has been forwarded. The following are exhibited:—

3229. [7576] Dhan Dhauta.

Hard white timber.

3230. [7575] Dhela Kata.

Hard yellow timber.

3231. [7594] Siris (*Mimosa Serisa*).

Hard light-brown timber.

3232. [10217] Sisa (*Dalbergia Sisoo*).

Hard brown timber.

3233. [10216] Sal Sakhna (*Shorea robusta*).

Hard brown timber.

3234. [7541] Belunnan.

Hard brown timber.

3235. [7582] Dhaman (*Grewia* sp.).

3236. [7535] Asân (*Terminalia alata-tomentosa*).

Hard brown timber.

3237. [7577] Pindar (*Grewia nudiflora*).

Hard white timber.

3238. [10219] Gora.

3239. [10244] Tun (*Cedrela Toona*).

WOODS FROM PHILIBEET.

Forwarded by CENTRAL COMMITTEE, Allahabad.

3240. [10221] *Nauclea cordifolia.*

3241. [10222] Usyna.

3242. [10223] Kame.

3243. [10224] Toon (*Cedrela Toona*).

3244. [10225] Saul (*Shorea robusta*).

3245. [10226] Sissoo (*Dalbergia Sisoo*).

3246. [10236] Kutha (*Acacia Catechu*), Shahjehanpore.

3247. [1221] Indian rosewood (*Dalbergia* sp.), Jhansee.

3248. [1222] Thurdai, Jhansee.

3249. [7239] Mahogany (*Swietenia Mahagoni*) grown in Calcutta. C. LAZARUS, Esq.

3250–1. [748–749] Bamboo (*Bambusa arundinacea*), Thibet. DR. CAMPBELL.

The collection of woods from Oude, amongst others,* comprises the following:—

3252. [7527] Neem (*Melia azedirachta*), Lucknow.

Plentifully in Oude.

3253. [7523] Peepul (*Ficus religiosa*), Lucknow.

In various parts of Oude.

3254. [7530] Mulseree (*Mimusops elengi*), Lucknow.

In various parts of Oude: not extensively.

3255. [7517] Toon (*Cedrela Toona*), Lucknow.

Spontaneously in the northern parts of Oude. It is considered the best for furniture of a high polish.

3256. [7526] Bahera (*Terminalia bellerica*), Lucknow.

Grows spontaneously in the Taraee. Not a very large tree: used for all purposes. From its fruit blacking is made.

3257. [7516] Jamun (*Eugenia jambolana*), Lucknow.

All over Oude. This is a large-sized tree, and bears a black astringent small fruit, about the size of a large olive, which the natives eat. Used for various kinds of wood-work.

3258. [7529] Asna or Asan (*Terminalia tomentosa*), Lucknow.

Spontaneously in the Taraee jungles. Considered durable and elastic for many purposes; preferable to sâl.

3259. [7525] Aum (*Mangifera indica*), Lucknow.

Cultivated extensively in Oude.

---

* Deposited at the India Museum, on account of want of space.

NATIONAL ARCHIVES OF INDIA

3260. [7524] Kaitha (*Feronia elephantum*), Lucknow.

In various parts of Oude, not extensively. The fruit of this tree is used for the same purposes with that of *Ægle marmelos*; but the latter is preferable.

3261. [7528] Bael (*Ægle marmelos*), Lucknow.

All parts of Oude, extensively. The fruit of this tree is extensively used dry in powder, and also for making shurbut for bowel complaints.

3262. [7518] Bair (*Zizyphus Jujuba*), Lucknow and various parts of Oude.

Used principally for making native *clogs*.

3263. [7522] Arar (*Ailanthus excelsa*), Lucknow.

Extensively all over Oude. The principal use made of this wood is for sword scabbards.

3264. [7513] Gooler (*Ficus glomerata*), Lucknow.

All over Oude. For furniture. From this tree some of the lac of commerce is gathered: the fruit is eaten by natives.

3265. [7519] Mhowah (*Bassia latifolia*), Lucknow.

All over Oude it grows. From the seeds oil is extracted, and from the fruits or flowers spirits are distilled.

3266. [7532] Saul (*Shorea robusta*), Midnapore.

3267. [7514] Sakhoo (*do.*), Lucknow.

Spontaneously and extensively in the Taraee. This is the timber generally used for building purposes, bridges, &c.; is durable, and is considered the best for such works.

Of the collection from the Punjab* the following specimens are exhibited:—

3268. [3729] Walnut wood, Mehra Forest, near Abbottabad, Hazara.

3269. [3730] Toon wood (*Cedrela Toona*), Do.

3270. [3740] Buroongi, Do.

An evergreen oak bearing acorns, leaves of young plant like those of the holly; a variety of oak, *Quercus* (*Quercus Ilex*).

3271. [3741] Umloke, Mehra Forest, near Abbottabad, Hazara.

3272. [3742] Mulberry, Mehra Forest, near Abbottabad, Hazara.

3273. [3743] Loon, Do.

Apparently a species of wild pear.

3274. [3744] Kungur or Kukker, Mehra Forest, near Abbottabad, Hazara.

A species of toon.

3275–6. [3745–6] Deodar (*Cedrus Deodara*), Mehra Forest, near Abbottabad, Hazara.

From Chittagong, as under:—

3277. [563] Toon (*Cedrela Toona*).

3278. [564] Chuckwah.

3279. [565] Tazeboil.

3280. [566] Loehah.

3281. [567] Chuckrassee (*Chickrassia tabularis*).

3282. [568] Gootgooteah.

3283. [569] Kandeb.

3284. [570] Jarrool (*Lagerstræmia regina*).

3285. [571] Gamar.

3286. [572] Chaplass.

Forwarded by the CENTRAL COMMITTEE, *Chittagong*.

The following are representatives from the collection from Arracan, forwarded through the LOCAL COMMITTEE at *Akyab*:—

3287. [9118] Kashy (*Erythina indica*), Akyab.

A strong wood, used as floor and wall-planking. It grows to a large size, and is procurable in the Sandoway district.

---

* A series of small specimens of timber in the form of a round table, forwarded from Umritsur, has lost its value in consequence of the labels on the individual pieces having in many instances become so damaged as to be illegible.

NATIONAL ARCHIVES OF INDIA

3288. [9119] Thykadah (*Erythina*), Akyab.

Used for making banghies, also for boxes. This tree grows to a large size, and is procurable throughout the province.

3289. [9158] Tahoot, Akyab.

For making banghies, and other fine work. It grows to a moderate size, but is not very plentiful.

3290. [9159] Toung-gangan, Akyab.

Sometimes used for planks. It grows to a large size, and is not very plentiful.

3291. [9144] Ka-moung, Akyab.

Used for planks, posts, &c. Grows to a large size, and is plentiful.

3292. [9145] Pya, ironwood (*Inga xylocarpa*?), Akyab.

Used in making rice mills. Grows to a moderate size, and is plentiful in Sandoway and Ramree districts.

3293. [9157] Thenganet (Tilsa), Akyab.

A very good wood, used for work of all kinds. Grows to a large size, and is very plentiful in the Akyab and Ramree districts.

3294. [9121] Phathan (*Bignonia stipulata*), Akyab.

Used by natives for bows, &c. It is a moderate-sized tree, very plentiful in the province.

3295. [9122] Bamaw, Akyab.

3296. [9123] Khoongho (*Dipterocarpus* sp.), Akyab.

Used for making oars for boats, and sometimes in house-building. It grows to a large size, and is plentiful in the Sandoway district.

Specimens of timber furnished by the Superintendent of the Gun-carriage Manufactory, *Madras*. COL. J. MAITLAND.

3297. [2501] Pegu teak (*Tectona grandis*).

Colour light brown. Grain straight and open. Free from knots.

Uses.—For all parts of light field carriages (except the beams); waggons and their limbers (except poles and splinter bars), as well as heavy field and garrison carriages, garrison traversing platforms, and gun and mortar platforms, and all parts of heavy and light mortar carts; store carts (with the exception of poles and splinter bars); platform line and water carts; gins and wheel work; heavy and light field ammunition boxes; transport carriages and limbers, and furniture work.

3298. [2502] Saul (*Shorea robusta*).

Strong coarse-grained timber. Colour both white and dirty-whitish-brown. The white is the better of the two. The grain is often short and cross, and contains little or no fibre; is liable to expand and contract; contains a good deal of acid.

Uses.—For beams of gun and howitzer carriages; light field axle-cases of all kinds; all parts of carts; transport carriage cheeks; handspikes of all sorts; perches of waggons, poles, short perches, braces, framing and splinter-bars of limbers; gun and waggon, and framing of all carts.

3299. [2503] Peddowk (*Pterocarpus dalbergioides*).

A good strong wood; colour deep and pale red. The pale is the lighter of the two, but the red is the stronger; it has an aromatic smell, and is slightly pungent to the taste, and when steeped in water imparts a deep indigo tinge to it.

Uses.—For light field beams, cheeks, axle-cases, perches, poles, limber framing, waggon perches, and framing; heavy field cheeks, transoms, axle-cases, handspikes, poles, braces, framing, &c. All parts of garrison carriages, garrison traversing platforms, as well as gun and mortar platforms; transport carriages and limbers, and cart work of all sorts; wheels, heavy and light field.

3300. [2504] Peemah (*Lagerstrœmia regina*).

A light tough-straight-grained wood. Colour pale red.

Uses.—For light field-cheeks, felloes, and cart naves; framing and boards of waggons, limbers, and platform-carts, and ammunition box-boards, and heavy field-cheeks.

3301. [2505] Trincomallie (*Berrya ammonilla*).

A good strong close-grained reddish-coloured wood.

Uses.—For light field splinter-bars, poles, pole-rests, waggon handspikes, wheel-props, &c.; heavy field-poles, handspikes, splinter-bars, pole-rests, garrison carriage handspikes, poles of carts, sick cart framing, spokes, yokes, &c.; and shafts.

3302. [2506] Satin (*Chloroxylon Swietenia*).

A strong curly-grained wood; its colour is whitish or yellow.

Use.—For naves.

3303. [2507] Rose (*Dalbergia latifolia*).

A strong fibrous and close-grained wood; its colour is good purple mottled with whitish veins. This wood is also called black wood.

Uses.—For light field-beams, cheeks, axle-cases, braces, perches, poles, splinter-bars, waggon-perches and framing spokes and felloes.

3304. [2508] Peengandoo (*Inga xylocarpa*).

A very heavy hard close-grained wood; it is of a reddish-brown colour, and of a brittle nature. It is also called iron wood.

NATIONAL ARCHIVES OF INDIA

Uses.—Poles, axle-cases, and braces for transport limbers; poles and yokes for water-carts; cheeks, axle-cases for transport carriages; light mortar-carts.

3305. [2509] Chittagong (*Chickrassia tabularis*).

A pale red-coloured light wood; it is rather soft, and some of it beautifully veined, somewhat resembling mahogany, and is susceptible of a high polish.
Uses.—Plane-tables and furniture work.

3306. [2510] Model or Putchavettoo (*Nauclea cordifolia*).

This wood is close-grained and soft, resembling the box in colour and texture; lighter, and easily worked; not durable; will not stand the alternations of dryness and moisture.
Uses.—A good wood for model work.

3307. [2511] Paula (*Mimusops hexandra*).

A very fine close-grained heavy wood, hard and very brittle, colour chocolate.
Uses.—For rulers, knobs, handles of tools, such as chisels, &c., and other articles of turnery.

3308. [2512] Thumbagum (*Vatica tambuggaia*).

A very strong, close-grained, splintery heavy wood. The tree yields dammer resin.
Uses.—It was tried in the arsenal, Fort St. George, for fuzes, some time ago.

3309. [2513] Malavemboo (*Melia azedarach*).

A light wood, colour reddish brown.
Use.—Will answer for boxes.

3310. [2514] Ebony (*Diospyros ebenaster*).

Hard, brittle, and heavy, and takes a high polish.
Use.—For ornamental work.

3311. [2515] Congo.

Colour brown, grain straight and not fine.
Use.—For fuzes.

TABLE SHOWING THE RESULTS OF EXPERIMENTS BY COLONEL MAITLAND ON THE WOODS UNDERNOTED.

NAMES OF TIMBERS	BREAKING WEIGHT IN TESTING EXPERIMENTAL PIECES, EACH 3 FT. LONG AND 1½ IN. SQUARE	AVERAGE DEFLECTION CALCULATED FROM A SERIES OF EXPERIMENTS	PERIOD OF SEASONING IN LOG	PERIOD OF SEASONING IN HALF-WROUGHTS	SPECIFIC GRAVITY OBTAINED BY APPROXIMATION	SOURCES FROM WHENCE OBTAINED
	lbs.	inch	yrs.		lbs.	
Pegu Teak . .	702 to 1000	·4 to 1·3	5 to 6	18 months for the larger component parts, 12 months for the smaller	41	Burmah
Saul	627 to 1187	·4 to 1·8	6	3 years for larger component parts, 2 years for the smaller	56	Cuttack, Bengal Provinces, and Burmah
Peddowk . .	739 to 1336	·5 to 1·5	5 to 6	2 to 3 years for the larger component parts, 18 months for the smaller	56·6	Burmah
Peemah . . .	664 to 888	·5 to 1·5	2	1 to 2 years . . .	36·25	Burmah
Rose	888 to 1187	·4 to 1·5	3	18 months . . .	50·5	Annamullay forests
Trincomallee .	739 to 1224	·5 to 1·5	2	12 do. . . .	50	Ceylon
Satin	739 to 1262	·5 to 1·7	3	6 do . . .	60·75	Ceylon and Southern India
					67·75	Southern India
Thumbagum .	1075 to 1187	·4 to 1·4				
Peengaudoo .	702 to 1064	·3 to 1·8	5	1 to 2 years . .	58·6	Burmah
Chittagong .			2	6 to 12 months . .	31	Annamullay forests
Model or Putchavettoo			1	6 months . . .	42	Annamullay forests and Malabar coast
Ebony . . .			3	12 months . . .	75	Ceylon and Southern India
						Annamullay forests
Malavemboo .						
Congo . . .			1½	6 months . . .	59	Malabar coast
Paula . . .			2	12 do. . . .	72	Southern India

WOODS OF SOUTH CANARA.

EXHIBITED BY V. P. COELHO, ESQ.

3312. [140] Sandal wood (*Santalum album*).

3313. [141] Savagani or Teak (*Tectona grandis*).

3314. [142] Halsu or Jack (*Artocarpus integrifolia*).

3315. [143] Kebalsu or Wild Jack (*Artocarpus incisa*).

3316. [144] Bengha.

NATIONAL ARCHIVES OF INDIA

3317. [145] Bou.

Strong wood used for building purposes.

3318. [146] Bannapoo (*Guettarda speciosa*).

A strong wood employed for building.

3319. [147] Terruvah.

Strong and useful for building purposes.

3320. [148] Marava (*Terminalia alata*).

Strong and useful building timber.

3321. [149] Jembu Nerlu.

3322. [150] Votte Kully.

3323. [151] Tamarind (*Tamarindus indica*).

3324. [152] Uru Sampige (*Michelia champaca*).

3325. [153] Kaddi Sampige.

3326. [154] Daddalu.

3327. [155] Torenha or Pumbilo.

3328. [156] Kalu boghe.

3329. [157] Pattu bage.

3330. [158] Shere Kane.

Used in boat-building and for spars.

3331. [159] Uru Hone.

Used for making boats.

3332. [160] Mango (*Mangifera indica*).

3333. [161] Jarrige.

3334. [162] Nanne.

3335. [163] Andippu naru.

3336. [164] Cadippilan.

Used in the preparation of a dye.

3337. [165] Manjutty.

The bark is employed for medicinal purposes.

3338. [166] Purrally.

3339. [167] Nalikai (*Emblica officinalis*).

For making frameworks for wells. Does not rot in water.

3340. [168] Santamarry.

Makes good gunstocks.

3341. [169] Renje.

3342. [170] Page or Gargass.

Leaves used instead of sandpaper for polishing wood.

3343. [171] Ardalla or gamboge tree (*Garcinia pedunculata*).

3344. [172] Cinnamon (*Laurus* sp.).

3345. [173] Mannadike.

3346. [174] Jungle Geru Kai (*Semecarpus anacardium*).

The juice is vesicatory. Nuts employed for marking cloth.

3347. [175] Cashew (*Anacardium occidentale*).

3348. [176] Halley.

3349. [177] Tally.

A very strong wood for building purposes.

3350. [178] Cocoa nut (*Cocos nucifera*).

3351. [179] Kunttal.

3352. [180] Karmara.

3353. [181] Dhûppa (*Vateria indica*).

3354. [182] Loukatty.

3355. [183] Tarrolly.

3356. [184] Areca nut (*Areca catechu*).

3357. [185] Blackwood (*Dalbergia frondosa*).

3358. [186] Ebony (*Diospyros melanoxylon*).

3359. [187] Jummikai.

3360. [188] Takote Kai.

3361. [7436] Pith of *Æschynomene*.

WOODS FROM MYSORE.

(*See Tables, pp.* 162–166).

3362. [2680] Teak (*Tectona grandis*), Nuggur Division, Mysore.

3363. [2706] Sandalwood (*Santalum album*), Nuggur Division, Mysore.

3364. [2707] Sandalwood, Chittledroog Division, Mysore.

NATIONAL ARCHIVES OF INDIA

COLLECTION OF WOODS FROM RANGOON,

By Messrs. HALLIDAY, FOX & Co.

3365. [4754] Ironwood (*Inga xylocarpa*).

3366. [2345] Tenasserim mahogany.

3367. [2339] Muniahban.

3368. [2337] Thengan (*Hopea odorata*).

3369. [2335] Teak (*Tectona grandis*).

3370. [2340] Mango (*Mangifera indica*).

3371. [2336] Ting-daik-nits.

3372. [2338] Ger-doma.

The residue of this series, being the same as shown by other exhibitors, and space being limited, are removed to the India Museum, Whitehall.

3373. [9395] Two young Teak trees (*Tectona grandis*), Pegu.* D. BRANDIS, Esq.

WOODS FROM MOULMEIN.

Forwarded by DR. GRAHAM.

3374. [7618] Thin Gan (*Hopea odorata*).

A very strong durable wood; used for making canoes.

3375. [10459] Pyen-ka-doe (*Inga xylocarpa*).

Wood extremely hard; used for house-posts.

3376. [7619] Ah Nan (*Xylocarpus granatum*).

A very strong wood; used for making gun-stocks and scabbards.

3377. [10460] Toun Phain (*Artocarpus echinatus*).

Used for making boats and carts.

3378. [7620] Bun Boay (*Careya arborea*).

A strong durable wood; used for house-posts.

3379. [7621] Gyoo Tha (*Mellicocca trijuga*).

This wood is used for bows, being tough and elastic.

3380. [7622] Oak An.

This wood is made into canoes.

3381. [7623] Toung Pain Nai (*Artocarpus echinatus*).

Fruit edible. Used in house building.

3382. [7624] Mya-ya-gyee (*Grewia floribunda*).

Made into any common house-building material.

3383. [7625] Fonok-sha-gyee (*Vitex arborea*).

Fruit eaten. The wood is used for any common purpose.

3384. [10461] Khan Tha.

This wood is made into any house-building material.

3385. [10462] Myouk Ngo, Moulmein lance wood.

Ditto.

3386. [10463] Tsouk Yo (*Dalbergia ovata*).

A tough wood; much used for tool handles.

3387. [7626] Mohmagah (*Galex* sp.).

Used in common purposes of building.

3388. [10496] Thau Thet Ngai (*Bignonia* sp.).

Ditto.

3389. [7691] Goay-pin-gyee (*Adenanthera pavonina*).

Ditto; and also its seed for weight in weighing gold.

3390. [7692] Balawa (*Garcinia speciosa*).

For common purposes of building.

3391. [7627] Yee Pyee (*Phyllanthus emblica*).

Ditto.

3392. [10464] Setphan.

Ditto.

3393. [7628] Goay Tha.

Ditto.

3394. [7629] Bom Mai Za (*Inga* sp.).

Wood hard. Used for making musical instruments.

3395. [7630] Thet Ya (*Gordonia floribunda*).

This wood is made use of for ordinary house-building purposes.

3396. [10465] Dedoap Tha.

Ditto.

3397. [7631] Ka nat Tha.

Ditto.

(*List of Moulmein woods continued on p.* 175.)

* Vide note appended to No. 3513 respecting these specimens.

NATIONAL ARCHIVES OF INDIA

SPECIMENS AND STATEMENT OF RESULTS OF EXPERIMENTS ON THE TRANSVERSE STRENGTH OF SEASONED WOODS FROM THE FORESTS OF WESTERN MYSORE.—CAPTAIN J. PUCKLE.*

Number	No. in List	NAMES OF WOODS	No. of Specimens	Deflection in Inches and Tenths: 1 — 126 lbs.	2 — 238 lbs.	3 — 350 lbs.	4 — 462 lbs.	Breaking weight in lbs.	Ultimate deflection	Specific gravity	Description	Uses to which applied, &c. &c.	Whether likely to be attacked by insects or not	Kind of fracture	Average size of rough squared log procurable, and if abundant or not	REMARKS
3398	[9088]	I	1 *Can.* Boghy	0·10	0·20	0·40	0·80	462	0·90	915	Dull brown, close grain	For furniture, is strong, and tough	No	Short fibrous	12×1×¾. Yes	No. 2 cracked at 630 lbs.
			2 *Lat.* Acacia (probably)	0·10	0·20	0·30	0·60	686	0·90							
3399	[9089]	II	1 *Can.* Soojhel	0·17	0·37	0·58	..	..	..	973	Bright brown, long grain, rather open	Has great resilience —useful for all purposes	No	Long fibrous	8×½×¾. Yes	No. 1 deflected 0·68 with 380 lbs.; 0·72 with 400 lbs.; 0·98 with 446 lbs.; 1·02 with 456 lbs. It was then unloaded, and recovered its shape all but 0·100 of an inch
			2	0·10	0·25	0·40	0·60	658	1·70							
			3 *Lat.* Acacia (probably)	0·25	0·40	0·60	1·00	574	1·60							
			4	0·20	0·40	0·60	0·80	462	0·90							
			5	0·20	0·40	0·63	..	400	0·75							
3400	[9090]	III	1 *Can.* Baughy	0·05	0·25	0·40	0·55	630	1·55	904	Light reddish brown, and with minute cavities, filled with secretion	For carriages, and house building	No	Long fibrous	12×1×¾. Yes	Cracked at 460 lbs.
			2 *Tam.* Vaghy	0·10	0·30	0·50	1·00	480	1·40							
			3 *Lat.* Acacia speciosa	0·20	0·30	0·50	0·60	582	1·10							
			4	0·10	0·20	0·40	0·60	639	1·20							No. 4 Did not break quite through
3401	[9091]	IV	1 *Can.* Hoonsay	0·12	0·38	..	..	294	0·60	1323	Heartwood is red and black, streaked; close-grained, knotty	For naves of wheels, oil mills, mallets, rice pounders, &c., excellent for brick and tile burning	No	Short fibrous	10×1½×1. Yes	No. 1 broke in two after half a minute's suspension; specimen bad
			2 *Tam.* Poolia Marum	0·10	0·20	0·45	0·75	602	0·95							No. 2 was not a fair specimen, it had a longitudinal crack; but it sustained the weight 40 seconds. Yields the best charcoal for gunpowder, the stones of the fruit pounded, and boiled with thin glue, make best wood cement
			3 *Lat.* Tamarindus Indica	0·20	0·30	0·50	0·70	486	0·80							
			4 *Tel.* Chinta Chettoo	0·10	0·22	0·30	..	345	0·45							
3402	[9092]	V	1 *Can.* Biti	0·10	0·20	0·40	0·60	574	0·70	818	Black, and streaked red, like rosewood, rather open grain	Furniture of every description	No	Short fibrous	18×1½×1¼. Yes, very	No. 1 broke after sustaining weight 20 seconds
			2 *Tam.* Yeti Marum	0·07	0·15	0·30	0·50	602	0·95							No. 2 cracked at 518 lbs., but sustained the last weight for one minute
			3 *Lat.* Dalbergia latifolia	0·15	0·30	0·45	0·60	522	0·80							Much larger timber is procurable in the forests of Malabar, where it grows to a stately and handsome tree; but in the largest specimens, earth is often found embedded. A fixed oil is procured from the seeds, and the root is medicinal
			4 *Tel.* Eroopootoo	0·10	0·20	0·40	0·60	597	1·10							No. 4 Did not quite break through

NATIONAL ARCHIVES OF INDIA

3403	[9093]	VI	*Can.* Honagul *Tam.* *Lat.* Terminalia	1 2 3 4	0·10 0·10 0·10 0·15	0·37 0·25 0·20 0·25	0·70 0·40 0·35 0·35	.. 0·70 0·55 0·60	450 480 576 569	1·20 0·85 0·60 1·00	913	Dark straw colour, compact	Furniture and house building	No	Long fibrous	17 × 1¼1.	Yes	No. 1 cracked after sustaining 448 lbs. for one minute, but broke through with an additional two lbs. No. 2 cracked and broke through, to neutral axis only No. 3 broke straight through This is perhaps the most abundant tree in the forests
3404	[9094]	VII	*Can.* Wullar Honay *Lat.* Pterocarpus	1 2 3 4 5	0·25 0·10 0·15 0·25 0·20	0·45 0·30 0·33 0·50 0·40	0·80 0·60 0·65 0·80 0·70	1·10 1·30	385 546 574 406 429	1·25 1·10 1·30 0·90 ..	1020	Light-coloured, open grain, an excellent timber	Furniture and house building	No	Rather long, and fibrous	17 × 1¼ × 1.	Yes	A variety of the *Pterocarpus Marsupium*. This wood is lighter, but apparently as good, and does not stain yellow, as the Rugta Honay does No. 1 cracked in the centre, and broke (but not quite through) after sustaining the weight for a few seconds
3405	[9095]	VIII	*Can.* Nellee *Tam.* Nellee *Lat.* Emblica officinalis *Tel.* Assereki	1 2	0·20 0·10	0·30 0·25	0·48 0·40	1·00 0·80	490 574	1·20 1·30	1080	Dark flesh colour, smooth, very close grain, compact and tough	For veneering: good for well-rings, does not decay under water, well adapted for turning	Yes	8 inches long and fibrous	8 × 1 × ¾.	Yes	No. 1 broke in two pieces, after sustaining the weight half a minute No. 2 scarcely broke beyond neutral axis The fruit (country gooseberry) is pickled and preserved: the bark is astringent and used in tanning—the young branches are often put in wells to purify the water
3406	[9096]	IX	*Can.* Nundee *Tam.* Benteak *Lat.* Lagerstrœmia microcarpa	1 2 3 4 5	0·15 0·10 0·10 0·15 0·20	0·30 0·20 0·25 0·30 0·40	0·60 0·40 0·50 0·40 0·57	1·10 0·50 1·20 0·60 0·70	467 574 462 518 541	1·20 0·70 1·20 0·90 1·00	660	Light brown, rather open grain	Useful for a variety of purposes, has great 'stiffness;' wooden bridges have been built of this	Yes	Long fibrous	18 × 1½ × 1.	Yes	The fracture of No. 1 was 6″ long. This wood is much used in the dockyard, but does *not* answer for sleepers, rotting quickly under ground
3407	[9097]	X	*Can.* Billawar *Lat.* Acacia odoratissima	1 2 3 4 5	0·10 0·10 0·15 0·10 0·10	0·30 0·30 0·25 0·25 0·20	0·45 0·40 0·45 0·40 0·30	0·65 0·65 0·55 0·60 0·50	546 504 518 578 711	1·30 2·20 0·80 0·80 1·20	730	Handsome grain, red and brown streaked, rather open	Has great toughness or elasticity, makes handsome furniture, resembling walnut, and much used in carriage building, for the frame-work, felloes, and spokes	No	Short fibrous	12 × 1½ × 1.	Yes	No. 1 cracked at 496 lbs., but sustained 546 lbs. for a second; at the moment of fracture, it deflected two inches; it broke very slowly, and not quite through No. 2 cracked after sustaining 476 lbs.; broke through at 504 lbs.
3408	[9098]	XI	*Can.* Rugta Honay *Tam.* Vengay *Lat.* Pterocarpus marsupium *Tel.* Yegasa	1 2 3 4	0·12 0·20 0·15	0·30 0·40 0·30	0·50 0·60 0·50	1·20 0·70 ..	.. 518 378	.. 0·70 0·70	820	Do. Do. but closer grain, and a little darker	Makes handsome furniture, and resembles fine mahogany, but must be well seasoned, or it stains yellow	No	Short, and rather splintery	17 × 1 × 1.	Yes	No. 1 cracked after bearing 475 lbs. for a few seconds; the weights were then taken off, and the specimen remained whole This tree, which grows to a large size, yields the gum 'Kino,' and is abundant in all the forests of southern India

* The weight was suspended from the centre of each specimen, which was 24 inches long and one inch square, and supported at both ends for one inch—so that the bearing was just 22 inches. *The experiments were perhaps carried on too quickly to give the best results.*

NATIONAL ARCHIVES OF INDIA

	Number	No. in List	NAMES OF WOOD	No. of Specimens	Deflection in Inches and Tenths: 1 126 lbs.	2 238 lbs.	3 350 lbs.	4 462 lbs.	Breaking weight in lbs.	Ultimate deflection	Specific gravity	Description	Uses to which applied, &c. &c.	Whether likely to be attacked by insects or not	Kind of fracture	Average size of rough squared log procurable, and if abundant or not	REMARKS
3409	[9099]	XII	*Can.* Nowladdi	1	0·05	0·20	0·40	0·60	518	0·70	907	Greenish brown, dull, close grain	Polishes well, is used for house building, and furniture, &c.	No	Long, and rather splintery	11×1×¾. Yes	This is one of the woods used as sleepers in the South Western Railway
3410	[9100]	XIII	*Can.* Haudiga	1	0·20	0·40	0·70	..	364	1·00	657	Light, mottled brown; long regular grain	Furniture; polishes and turns well, useful for the cabinet maker; and would do for veneering	No	Splintery	9×¾×¾. Not very	No. 1 bad specimen No. 2 cracked at 462 lbs., and broke after sustaining the weight one minute
				2	0·15	0·30	0·50	1·10	462	1·20							
3411	[9101]	XIV	*Can.* Jálari *Tam.* Talura *Lat.* Vatica laccifera	1	0·20	0·40	0·60	0·80	462	1·00	689	Light yellow; long fibrous grain	Strong useful wood for a variety of purposes	No	Short	10×1×1. Yes	A large tree, which the lac insect attacks; the shellac of commerce is procured from it
				2	0·20	0·35	0·55	..	434	0·70							
3412	[9102]	XV	*Can.* Kurraymutti *Tam.* Kurray Maradah. *Lat.* Terminalia tomentosa *Tel.* Muddie	1	0·05	0·20	0·40	1·00	462	..	892	Dark brown; open grain	House building; bears a good transverse strain; a wood much esteemed for all railway purposes	No	Rather splintery	18×1¼×1. Yes, very	No. 1 cracked at 406 lbs.: very abundant everywhere
				2	0·10	0·30	0·50	1·00	462	..							
				3	0·20	0·30	0·45	0·60	602	1·10							
				4	0·10	0·20	0·40	0·50	589	0·10							
3413	[9103]	XVI	*Can.* Jambay *Tam.* Erool *Lat.* Inga xylocarpa *Tel.* Ezoovaloo	1	0·15	0·35	0·60	..	350	0·70	934	Dull dark chocolate brown, with orange tint; close grain	Furniture, shafts, plough heads and knees, and crooked timbers in ship building; and railway sleepers	No	Long	14×1×34. Yes	No. 1 cracked at 350 lbs., and snapped with that weight after half a minute A large tree, the timber is hard, durable, and in great demand The bark is astringent, and used for dyeing black
				2	0·10	0·25	0·65	..	406	0·70							
3414	[9104]	XVII	*Can.* Sagwan *Tam.* Theke Marums *Lat.* Tectona grandis *Tel.* Teka	1	0·20	0·40	0·70	..	400	..	684	Light brown, open grain	Ship building, house ditto, furniture, &c. &c.	No	Splintery	30×1¼×1½. Yes, very	No. 1 broke in two suddenly No. 2 snapped short in two, after sustaining weight for a few seconds No. 3 Do. Do. N.B.—The Nuggur teak appears not to be so good as that of the Mysore and Malabar forests. Sometimes timber of much larger scantling is procurable, but seldom longer
				2	0·20	0·48	0·80	..	350	..							
				3	0·20	0·40	0·60	..	406	0·80							
				4	0·25	0·55	..	..	322	0·70							
				5	0·20	0·40	..	..	387	0·50							

NATIONAL ARCHIVES OF INDIA

3415	[9105]	XVIII	*Can.* Dinduga *Tam.* Vella Nága *Lat.* Conocarpus latifolia *Tel.* Siri Maun	1 2 3 4	0·15 0·15 0·25 0·10	0·35 0·30 0·40 0·30	0·70 0·50 0·65 0·50	.. .. 0·90 0·70	406 406 510 513	0·80 0·80 1·25 0·80	1037	Close compact grain, yellowish striped, and something like satin wood. Very handsome	House building, shafts and yokes, and general use for railway purposes; but makes very good cabinet furniture	No	Splintery	12×¾×¾.	Yes, very	Snapped like the preceding; but is much used at Bangalore
3416	[9106]	XIX	*Can.* Kuddavailoo *Tam.* Vella Cadambay *Lat.* Nauclea Cadamba *Tel.* Rudrakshakamba	1 2 3	0·10 0·15	0·35 0·60	0·80 ..	.. ..	378 294	0·90 0·60	681	Brownish yellow, close compact grain, tough	For various kinds of furniture	Yes	Splintery	12×1½×¾.	Yes	Snapped like the preceding. A large and ornamental tree which yields extensive shade
3417	[9107]	XX	*Can.* Sumpaghy *Tam.* Chumpaca *Lat.* Michelia Champaca	1 2	0·20 0·15	0·50 0·40	0·90 0·90	.. ..	350 350	0·90 0·90	671	Rich brown, rather close grain	Very handsome furniture, and polishes well; grows to a very large size; has a yellow, sweet-scented flower	Yes	Splintery	15×3½×2½.	Very	No. 1 snapped at 350 lbs.; but there being a knot in the middle, it was not a fair specimen This tree is highly venerated by the Hindoos, &c., dedicated to Vishnu; the bark is bitter, and very acid
3418	[9108]	XXI	*Can.* Mauvena *Tam.* Maah Marum *Lat.* Mangifera Indica *Tel.* Mámada Chettoo	1 2 3 4	0·10 0·20 0·10 0·27	0·30 0·30 0·30 0·50	.. .. 0·70 0·60	.. ..	294 317 350 850	1·00 0·45 0·70 0·60	597	Light greyish straw, open grain, and rather soft	For solid wheels of the country carts, and rough furniture	Yes	11 inches long	9×½×1½.	Very	Snapped suddenly. The wood is sacred, and used by the Hindoos for burning corpses. A reddish brown gum resin, hardening by age, and resembling bdellium, is procured from this tree
3419	[9109]	XXII	*Can.* Godda *Lat.* Cedrela	1 2	0·40 0·20	.. 0·40	.. 0·80	.. ..	182 350	.. 0·85	639	Light flesh, close even grain	Polishes well, and is good for turning	Yes	Splintery, brittle	9×¾×¾.	Very	No. 1 deflected much, and broke in two, almost immediately at 182 lbs. No. 2 snapped in three pieces very suddenly
3420	[9110]	XXIII	*Can.* Bayvena *Tam.* Vepa Marum *Lat.* Melia Azadirach *Tel.* Taruka vépa	1 2	0·30 0·20	0·70 0·60	1·00 ..	.. ..	294 294	1·00 1·70	783	Light flesh, open grain, sweet scented	Common furniture, but it warps and splits	No	Long splintery	15×1⅜×1¼.	Very	No. 1 cracked at 224 lbs., and broke after sustaining the last weight for one minute No. 2 broke near one end suddenly. The heart wood is good, but the branches are very apt to break and snap off in high wind. Margosa oil is extracted from the yellowish green seeds, which are about the size of small gooseberries
3421	[9111]	XXIV	*Can.* Mussee *Lat.* Lauracea.	1 2 3 4	0·30 0·20 0·20 0·40	0·65 0·50 0·50 0·57	.. ..	.. ..	280 261 238 238	.. 0·60 0·50 0·60	839	Very light brown, open grain	In general demand	No	Shortish and rather splintery	10×¾×¾.	Yes	Broke near one end suddenly, near a knot
3422	[9112]	XXV	*Can.* Halasoo *Tam.* Peelah Marum *Lat.* Artocarpus integrifolia *Tel.* Panasa	1 2 3 4	.. 0·20 0·15 0·30	.. 0·54 0·50 0·60	.. 0·80 .. 1·00	.. ..	112 485 280 350	0·30 0·90 0·70 1·20	676	Yellow at first, but on exposure it assumes a darker tint, approaching to dull mahogany	Furniture, chairs, tables, &c., picture frames, &c.; but must be well seasoned, or it will warp and crack	Yes	Splintery	12×1×1¼.	Yes	No. 1 bad specimen. Broke suddenly, without sustaining the weight a single moment Broke suddenly. Produces the large 'Jack' fruit. Birdlime is manufactured from the juice of the bark, and the leaves are greedily eaten by cattle; the roasted seeds are much used by the poorer people

NATIONAL ARCHIVES OF INDIA

Number	No. in List	NAMES OF WOOD	No. of Specimens	Deflection in Inches and Tenths: 1 — 126 lbs.	2 — 238 lbs.	3 — 350 lbs.	4 — 462 lbs.	Breaking weight in lbs.	Ultimate deflection	Specific gravity	Description	Uses to which applied, &c. &c.	Whether likely to be attacked by insects or not	Kind of fracture	Average size of rough squared log procurable, and if abundant, or not	REMARKS
3423 [9113]	XXVI	*Can.* Yettáyga *Tam.* Munja Cadumbay *Lat.* Nauclea cordifolia *Tel.* Daduga	1 2 3 4	0·45 0·40 0·40 0·45	0·90 0·90 0·75 0·70	.. ..	.. ..	252 245 238 277	0·90 1·00 0·75 0·95	581	Dull yellow, close short grain	Polishes well, resembles box wood, and is good for turning; cracks and warps; is light and durable if kept from wet	Yes	Very splintery and brittle	14×1½×1½. Very	No. 2 snapped in two like a carrot No. 3 do. after one minute's suspension No. 4 the last two lbs. caused it to snap like the others
3424 [9114]	XXVII	*Can.* Thengana *Tam.* Thenga Marum *Lat.* Cocos nucifera *Tel.* Tenkaia	1 2 3 4	0·20 0·20 0·10 0·15	0·50 0·30 0·30 0·40	.. 0·47	.. ..	238 457 238 294	0·50 0·50 0·55 0·60	747	Light speckled, something like a nutmeg in the section; pithy	Ridge poles for temporary roofs, aqueducts, &c. &c.	Yes	Very fibrous	28×¾×½. Yes	With 182 lbs. No. 4 deflected much, but it broke nearly through after sustaining the weight (238 lbs.), and remained so, kept together by its stringy fibres, with a deflection of three inches. This tree produces the cocoa nut oil and fibre of commerce; the leaves are used for thatching houses; Toddy is also extracted
3425 [9115]	XXVIII	*Can.* Somy	1 2	0·20 0·30	0·30 0·60	.. ..	.. ..	.. 294	.. 0·80		Handsome red, rather open grain, but it warps and cracks	Furniture	No	Splintery	Yes	Neither specimen good
3426 [9116]	XXIX	*Can.* Baulay *Tam.* Toombra *Lat.* Diospyros melanoxylon *Tel.* Toomida	1							1200			No		Yes	
3427 [9117]	XXX	*Can.* Thadsal	1 2	0·10 0·12	0·20 0·30	0·30 0·40	0·60 0·70	558 533	0·90 0·80		Light, close even grain		Yes	Straight, short, fibrous	16×1½×1. Yes	Apparently a very excellent wood

N.B.—The size of the logs is under, rather than over stated.

EXTRA EXPERIMENTS WITH WOODS OF LARGE SCANTLING.

	Scantling	Weight Suspended in lbs.	Deflection in inches	REMARKS
Hoonagul	15′—3″—5″	1058	2	On previous occasion this piece of wood was suffered to remain five weeks with a weight of 1,600 lbs. suspended from the centre, and exposed to alternate rain and sun. The deflection was three inches, but when the weight was removed the wood regained its original position
		1658	3	
		1858	3½	
		2258	4	
		2558	4½	
		2782	5	
		3006	5½	
		3230	7½	Commenced to creak and broke after six minutes' suspension at a small knot a foot from the centre
Kurraymutti	15′—3″—5″	1058	1½	
		2258	3	Commenced to creak and broke at 1½ feet from the centre after two minutes' suspension. Not a good specimen

NATIONAL ARCHIVES OF INDIA

WOODS FROM BURMAH.

The following numbers from 3428 to 3540, embracing 112 samples of wood are the excellent collection of DR. D. BRANDIS, Superintendent of Forests in the *Pegu, Tenasserim,* and *Martaban* provinces.

Number	BURMESE NAME	SYSTEMATIC NAME OF TREE	Weight of 1 cubic ft. in lbs.	Average size of full-grown trees on good soil		REMARKS *
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
3428. [10341]	Zimbjoon . .	Dillenia aurea, Sm. .	48	9	20	Abundant in the plains and on the hills. Wood occasionally used in house-building, but mostly for firewood. Br. weight 198 lbs.
3429. [10342]	Bjooben . .	Dillenia pentagyna, Roxb.	69	6	20	Abundant in the Eng forest (forest of *Dipterocarpus grandiflora*). Wood hard and strong, used for rice mills
3430. [10343]	Thabyoo . .	Dillenia speciosa, Thunb.	41	5	15	On the banks of the mountain streams. Wood not used
3431. [10344]	Thabootkyee .	Meliusa velutina, Hf. & Th.	42	5	15	All over the plains. Wood used for the poles of carts and harrows, yokes, spear-shafts, oars, &c.
3432. [10345]	Lepan . . .	Bombax malabaricum, Dc.	28	15	60	The cotton tree, abundant in the plains. Wood light and loose-grained, used for coffins. The cotton used for stuffing pillows
3433. [10346]	Let-Khop . .	Sterculia fœtida, L. .	33	10	50	Common in the plains and on the hills. Wood not used
3434. [10347]	Pinlay Kana-zoe	Heritiera sp. . . .	66	6	30	Common in the Delta of the Irrawaddy. Wood used for house posts and rafters, and for firewood for the manufacture of salt. The tree is nearly related to the 'Soondree' of Bengal
3435. [10348]	Petwoon . .	Berrya mollis, Wall. .	56 to 62	7	50	Found on elevated ground. Wood red, much prized for axles, the poles of carts and ploughs; also used for spear handles
3436. [10349]	Dwa-Nee . .	Eriolœna sp. . . .	47	7	50	Trees not uncommon, but not very large. Wood of a beautiful brick-red colour, tough and elastic, used for gun-stocks, paddles, and rice-pounders. A wood well worth attention, the weight being moderate
3437. [10350]	Mya-ya . .	Grewia microcos, L. .	51	4	10	Found on elevated ground. Wood not used
3438. [10351]	Ka-nyin . .	Dipterocarpus alata, Wall.	38	25	100	The wood oil tree of Burmah. The wood decays very fast: used for canoes, which last only from three to four years
3439. [10352]	Eng	Dipterocarpus grandiflora, Wall.	55	10	60	This tree forms, in company with a few other kinds, extensive forests which cover upwards of 2,000 square miles in the Province of Pegu. Wood somewhat more durable than that of 'Kanyin' (No. 3438): used for canoes, house-posts, planking, &c.
3440. [10353]	Kyau-thoo .	Dipterocarpus sp. .	43	20	80	A large tree found in the hills. Wood used for canoes and cart-wheels

* The figures marked 'Br. weight' denote the weight required to break a piece 4 ft. long, 1 in. square, laid on supports 36 inches apart. These results were obtained by a few preliminary experiments, and are subject to corrections.

NATIONAL ARCHIVES OF INDIA

Number	BURMESE NAME	SYSTEMATIC NAME OF TREE	Weight of 1 cubic ft. in lbs.	Average size of full-grown trees on good soil		REMARKS
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
3441. [10354]	Thingan . .	Hopea odorata, Roxb.	46	12	80	One of the finest timber trees of the country. Found near mountain streams and in evergreen forests. Large specimens of this valuable tree are common east of the Sittang river, but rather scarce in the greater part of Pegu. Wood much prized for canoes and cart-wheels. Boats made of this wood are said to last for more than twenty years
3442. [10355]	Thingadoe .	Hopea sp.	52	20	100	Large trees abound in the same localities as the foregoing, but the wood is not equally valued
3443. [10356]	Engyin . . .	Hopea suava, Wall. .	55	7	60	This valuable tree is found in the Eng forest. Large trees not common in Pegu. Wood tough and hard, but heavy, used in house-building, for bows, and a variety of other purposes: said to be as durable as teak
3444. [10357]	Theya . . .	Shorea obtusa, Wall.	57	7	50	In the Eng forest and on the brow of hills in Pegu. Wood valued equally with Engyin
3445. [10358]	Gangau . .	Mesua ferrea, L. . .	69	5	20	Cultivated in Pegu on account of the beauty and fragrance of its flowers, but wild in Tenasserim. Wood said to be used for furniture
3446. [10359]	Toung-tha-lay	Garcinia cowa, Roxb.	42	6	20	Scattered over the hills. Wood not used
3447. [10360]	Tha-ra-phee .	Calophyllum sp. . .	57	4	20	Wood used for carving images, occasionally for canoes
3448. [10361]	Poonyet . .	Calophyllum sp. . .	39	12	60	Firewood
3449. [10362]	Gyo . . .	Schleichera trijuga, Willd.	70	12	25	One of the heaviest woods known in Burmah, common in the plains as well as on the hills: used for cart-wheels, the teeth of harrows, the pestles of oil mills, &c.
3450. [10363]	Tsheik-khyee.	Sapindus sp. . . .	66	6	40	Found on the hills and in the forests skirting them. Wood prized for house-posts, ploughs, &c. Colour grey, with a beautifully mottled grain
3451. [10364]	Pinlay-oong .	Xylocarpus granatum, Koen.	47	7	20	In the forests of the Delta. Wood used for house-posts and musket-stocks
3452. [10365]	Thit-kadoe .	Cedrela toona, Roxb.	28	8	40	On the hills and in the plains, plentiful in some districts. If not identical with the Toon of Bengal, certainly nearly related to it
3453. [10366]	Yimma .	Chickrassia tabularis, Juss. ? .	24	8	80	Scattered throughout the forests on elevated ground, large trees scarce. Either identical with 'Chittagong wood' or nearly related to it
3454. [10367]	Boomayza . .	Albizzia stipulata, Boiv.	66	9	30	Common throughout the forests on elevated ground; heartwood brown, beautifully streaked, but rather small, the sap wood being very large. Much prized for cart-wheels, also used for the bells of cattle

NATIONAL ARCHIVES OF INDIA

Number	BURMESE NAME	SYSTEMATIC NAME OF TREE	Weight of 1 cubic ft in lbs.	Average size of full-grown trees on good soil		REMARKS.
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
3455. [10368]	Seet	Albizzia alata . . .	42 to 55	10	40	Abundant throughout the country in the plains, particularly near the banks of rivers. This wood may at a future time become an important article of trade. The heartwood is strong and durable, and less heavy than that of most trees of the same family. The only drawback is, that the proportion of sapwood is large. Used by the Burmans for bridges and house-posts. Br. weight 250 lbs.
3456. [10369]	Sha	Acacia catechu, L. var. a.	56	6	20	Common all over the plains and scattered over the hills. Immense numbers of these trees are annually cut down and made use of for the extraction of cutch. The wood is considered more durable than teak, and is used for house-posts, spear and sword handles, bows, &c. There are several varieties, differing in shade, specific weight, and yield of cutch
3457. [10370]	Sha	Acacia catechu, L. var. b.	70	6	20	
3458. [10371]	Boay-gyin . .	Bauhinia malabarica, Roxb.	42	4	15	Common in the plains. Wood used for the cross pieces of harrows, house posts, &c.
3459. [10372]	Hpa-lan . .	Bauhinia racemosa, Lam.	44	3	10	Resembles No. 3458
3460. [10373]	Gnoo-shwoay .	Cathartocarpus fistula, L.	66	4	15	Common in the plains and on the hills. Wood used for bows, axles of carts, &c.
3461. [10374]	Gnoo-gyee .	Cassia sp.	57	4	15	Same as No. 3460
3462. [10375]	May-za-lee .	Cassia florida. . .	58	6	15	Cultivated. Heartwood almost black: used for helves, walking-sticks, mallets, &c.
3463. [10376]	Yin-dike . .	Dalbergia sp. . . .	64	9	35	Common in the plains and on the hills. A kind of black wood well worth notice. The sapwood of this tree decays rapidly, but the heartwood is extremely durable; it is black, sometimes with white and red streaks, elastic, but full of natural cracks. Used for ploughs, bows, handles of dahs and spears. There are probably two kinds in the country
3464. [10377]	Pynkado . .	Inga xylocarpa, L. .	60 to 66	9	50	A magnificent tree, abundant throughout the forests on and near the hills. The *Ironwood* of Pegu. The sapwood is attacked by white ants, and decays easily, but is very small in large trees. The heartwood of full-grown trees is said to last as long as teak. This wood would be invaluable if it were not for its weight. Used for house and bridge posts, ploughs, boat-anchors, in the construction of carts, and for other purposes
3465. [10378]	Thitpouk . .	Leguminosæ . . .	35	4	20	A light wood, not much used

NATIONAL ARCHIVES OF INDIA

Number	Burmese Name	Systematic Name of Tree	Weight of 1 cubic foot in lbs.	Average size of full-grown trees on good soil		Remarks
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
3466. [10379]	Padouk . . .	Pterocarpus dalbergioides	60	9	35	Trees of the largest size, of this strong and beautiful timber, abound in the forests east of the Sitang river, also in the valley of the Salween river, and its tributaries, the Thoungyeen, Yoonzalen, Hlineboay, Houndraw, and Attaran. Much less frequent in Pegu, and entirely wanting in some districts. Wood prized beyond all others for cart-wheels. The trees are felled green, and are split up into short planks, 3 ft. 6 in. long, 2 ft. wide, and 9 in. thick. Three of these pieces make one wheel, and a pair is sold on the spot, in the forests of the Prome district, at from 12 to 25 R. The wood is extensively used in the gun-carriage manufactories in India
3467. [10380]	Kokoh . . .	Albizzia sp. . . .	48	12	60	In the northern districts of Pegu, on and near the hills. The wood is valued by the natives as much as Padouk (No. 3466), or even more so. It is used for cart-wheels, oil-presses, and canoes. In the Prome district, a special tax was levied on the felling of 'Kokoh' and 'Padouk' under the Burmese rule. Large trees are becoming very scarce in the Irrawaddy valley, but are not uncommon in the Toungoo district
3468. [10381]	Thinwin . .	Pongamia sp. . . .	60	6	20	Not uncommon in the dry forest, in the plains, and on the hills. The heartwood, which is black and tough, but rather small, is used for the cross pieces of Burmese harrows, the teeth being made of Sha (No. 3456), Myoukkhyau (No. 3485), and Gjo (3449)
3469. [10382]	Pouktnenma-myek-kyouk	Leguminosæ . . .	58	5	15	A light-coloured, close-grained wood, much prized by Burmans
3470. [10383]	Tounkatseet .	Leguminosæ . . .	45	10	50	Not uncommon on the hills. Wood used for canoes
3471. [10384]	Thitsee . . .	Melanorhœa usitatissima, Wall.	54	9	30	The varnish-tree of Burmah. Rare in the Irrawaddy valley, common in the forests east of the Sitang river, particularly south-east of Sitang Town. Wood dark red, hard and close-grained; used by the Burmese for the stocks of their wooden anchors, tool helves, &c.
3472. [10385]	Khyong-yook.	Garuga pinnata, Roxb.	52	9	40	Tree rather common in plains, and on the hills. Wood not much used
3473. [10386]	Nabhay . .	Odina wodier . . .	65	12	50	Tree rather common on the hills. Heartwood red, used for sheaths of swords, spear-handles, oil-presses, and rice-pounders
3474. [10387]	Titseim . .	Terminalia bellerica, Roxb.	40	12	80	Common throughout Pegu. Wood not used
3475. [10388]	Pangah . .	Terminalia chebula, Retz.	53	12	80	Common on the hills. A valuable wood, used for yokes and canoes; heartwood yellowish brown

NATIONAL ARCHIVES OF INDIA

Number	BURMESE NAME	SYSTEMATIC NAME OF TREE	Weight of 1 cubic foot in lbs.	Average size of full-grown trees on good soil		REMARKS
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
3476. [10389]	Lein . . .	Terminalia bialata, Roxb.	39	12	80	Common. Wood not used
3477. [10390]	Htoukgyan .	Terminalia macrocarpa	58	12	80	One of the largest trees in Pegu, very common, and the stems of very regular shape. Heartwood dark brown. Used for house-posts and planking
3478. [10391]	Yoong . . .	Conocarpus acuminatus	50 to 57	12	80	Almost equal to the preceding, in size and the regular growth of its stem. Wood reddish brown, hard and strong. Br. weight 226 lbs. NOTE.—If it were not for their weight, Nos. 3473, 3475, 3477, and 3478 would be most valuable for furniture
3479. [10392]	Bambouay . .	Careya arborea, Roxb. var. a. (dark)	55	9	20	Common throughout the country. Wood used for gun-stocks, house-posts, planks, &c.
3480. [10393]	Bambouay .	Careya arborea, Roxb. var. b. (light)	55	9	20	Same as foregoing
3481. [10394]	Thabyehgjo .	Eugenia obtusifolia, Roxb.	48	9	20	The different kinds of Thabyeh have a hard, red-coloured wood, but not straight-grained, and supposed to be brittle. The stems are occasionally used for canoes, especially those of Thabyehgah. Br. weight of the Thabyehgah, 254 lbs.
3482. [10395]	Thabyehgyin .	Eugenia cerasoides, Roxb.	51	9	40	
3483. [10396]	Thabyehthapan	Eugenia, sp. . . .	50	9	30	
3484. [10397]	Thabyehgah .	Eugenia caryophyllæfolia, Roxb.	56	6	20	
3485. [10398]	Myouk-kyau .	Blackwellia tomentosa, Vent.	56	6	70	Wood tough, of a light yellow colour, used for the teeth of harrows
3486. [10399]	Laizah . . .	Lagerstrœmia pubescens, Wall.	53	12	100	A very large tree, stem not always perfectly round, inclined to form buttresses. Timber valued for bows and spear handles, also used for canoes and cart-wheels
3487. [10400]	Thitpyoo . .	Lagerstrœmia sp. .	30 to 38	12	80	A light but comparatively strong wood, colour white and pinkish, probably a valuable wood for furniture. Used for planking. Br. weight 153 to 179 lbs.
3488. [10401]	Pyimma . .	Do. Regina, Roxb. var. a. wood light red	37	12	30	A splendid tree, abundant throughout the country. Wood used more extensively than any other, except teak: used generally for the fittings of boats, sometimes for the hulls of canoes, for house-posts, planking, beams, scantling for roofs, carts, and a variety of other purposes. Large quantities are now employed for ordnance purposes. The wood of the light-coloured variety is less heavy, and is said to be less durable
3489. [10402]	Pyimma . .	Do. Regina, var. b. wood dark red	44	12	30	
3490. [10403]	Tsambelay .	Do. parviflora, Wall.	40	5	15	Wood not much used
3491. [10404]	Myoukgnau .	Duabanga grandiflora, Wall.	30	12	80	Wood used in house-building
3492. [10405]	Hnau . . .	Nauclea cordifolia, Roxb.	42	10	80	Trees large, of regular growth, but not very common. Wood yellow, rather close-grained, used to make combs — may be expected to prove valuable for furniture
3493. [10406]	Bingah . .	Nauclea diversifolia, Wall.	45	7½	60	Wood of a light yellow colour, not much used, but may be recommended for furniture

NATIONAL ARCHIVES OF INDIA

Number	BURMESE NAME	SYSTEMATIC NAME OF TREE	Weight of 1 cubic ft. in lbs.	Average size of full-grown trees on good soil		REMARKS
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
3494. [10407]	Maookadoon .	Nauclea cadamba, Wall.	37	15	70	Wood of a deep yellow colour, but loose-grained; recommended for furniture
3495. [10408]	Ma-oo lettan .	Nauclea undulata, Wall.	23 to 34	15	100	A soft useless wood, decays in less than a year. Br. weight 80 to 120 lbs.
3496. [10409]	Htein . . .	Nauclea parviflora, Roxb.	43	6	30	Used for planking
3497. [10410]	Hteingalah .	Nauclea sp. . . .	43 to 56	6	40	Wood of a light chestnut colour, recommended for furniture. Br. weight 208 lbs.
3498. [10411]	Hteinthay .	Do.	35	6	30	Wood not used. Br. weight 170 lbs.
3499. [10412]	Tsaythambyah	Gardenia lucida, Roxb.	49	3	15	A white close-grained wood, apparently well adapted for turning. This wood, like that of several other species of Gardenia and Randia, is used for making combs
3500. [10413]	Ouk-khyin-za	Diospyros sp. . . .	41	9	30	A beautifully white and black mottled wood, used for house-posts
3501. [10414]	Gjoot . . .	Do. sp.	49	3	15	Wood similar to that of the foregoing, but a much smaller tree. Small quantities of black heartwood (ebony) are occasionally found near the centre of very old trees of this and another kind nearly related to it (Taybeu)
3502. [10415]	Kbaboung .	Strychnos nux vomica, L.	52	3	15	Trees small, but common. Wood close-grained and hard
3503. [10416]	Toung-za-lat .	Wrightia sp. . . .	55	5	40	A beautiful wood
3504. [10417]	Paet-than . .	Spathodea stipulata, Wall.	48	4	20	Used for bows and spear handles, also for paddles and oars
3505. [10418]	Thit-lin-da .	Spathodea sp. . .	63	6	50	A white wood, not much used
3506. [10419]	Tha-khoot-ma	Spathodea Rheedii, Spreng	35	7	30	Wood used for yokes and cart poles
3507. [10420]	Than-day . .	Bignonia sp. . . .	33 to 36	7	30	A light loose-grained wood, not much used. Br. weight 125 lbs.
3508. [10421]	Kyoun-douk .	Do.	23	2	15	Wood not used
3509. [10422]	Thanat . . .	Cordia myxa, L. . .	33	4	15	Wood soft, not used. Leaves collected extensively, sold for cover leaves for cigars
3510. [10423]	Kjeyoh . .	Vitex sp.	45	3	15	Wood used for tool handles, much prized, but rather scarce
3511. [10424]	Htouk-sha .	Vitex leucoxylon, Roxb.	42	12	30	A large tree very common in the plains. Wood grey, deserves attention for furniture: used for cart-wheels. Br. weight 142 lbs.
3512. [10425]	Kyoon-na-lin .	Premna pyramidata, Wall.	52	5	30	Wood strong, used for weaving shuttles. Trees small
3513. [10426]	Kuyon—Teak	Tectona grandis, L. .	40 to 51	18	90	The best teak forests in British Burmah are on the hills between the Sitang and Irrawaddy rivers, and in the Thoungyen valley; but even these forests are poor compared with the extensive tracts covered with teak-producing forests to the north of the British boundary, especially on the feeders of the Sitang and Salween rivers, and some of the tributaries of the Meinam, or Bankok river. The trees also are, as a rule, much larger, and the shape of the stem more regu-

NATIONAL ARCHIVES OF INDIA

Number	BURMESE NAME	SYSTEMATIC NAME OF TREE	Weight of 1 cubic ft. in lbs.	Average size of full-grown trees on good soil		REMARKS
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
						lar, in the forests of the Burmese empire, the Siamese kingdom, and the Karennee country. The tallest teak tree measured in Pegu was 106 ft. high to the first branch. The strength and density of teak timber vary exceedingly, according to the locality where the tree is grown. The extremes observed in preliminary experiments were 40 and 50 lbs. per cubic foot, and 190 lbs. to 289 lbs. breaking weight. Teak, when young, grows very rapidly. The two stems sent were dug out by me in July 1858, at the Thinganenoung nursery in the Attaran forests. The seed had been sown in March and April 1856. The plants, therefore, were two years and three months old. The largest seedlings had a girth of 13 in. measured one foot from the ground, and of 8 in. at 6 ft. from the ground. They were 32 ft. high, but this is an instance of uncommonly rapid growth. Trees ten years old have usually a girth of 18 in., measured at 6 ft. from the ground; with 22 years a girth of 3 ft. is attained; but full-grown trees of 9 ft. in girth cannot be supposed to be less than 160 years old
3514. [10427]	Yemaneh . .	Gmelina arborea, Roxb	35	12	50	A large tree with white light wood, used for house-posts, planks, and for carving images. Recommended for planking and furniture
3515. [10428]	Thit-kya . .	Quercus semiserrata, Roxb.	48	4	20	Used for plugs or pins to join together the three pieces which compose the body of a Burmese cart-wheel
3516. [10429]	Momakha . .	Salix tetrasperma, Roxb.	37	3	10	Wood not used
3517. [10430]	Tounbein . .	Artocarpus mollis, Wall.	30	12	80	Immense trees, wood used for canoes and cart-wheels. On the hills, large trees rather scarce
3518. [10431]	Toun-pain-nai	Artocarpus sp. . .	39	12	80	Wood yellow, used like the preceding
3519. [10432]	Myouklouk .	Artocarpus lacoocha, Roxb.	40	6	30	Used for canoes
3520. [10433]	Thaphon . .	Ficus lanceolata, Roxb.	27	12	25	Wood *soft*, useless
3521. [10434]	Theetmin . .	Podocarpus neriifolia	50	6	20	The meaning of the Burmese name is, 'the prince of trees.' Large trees with stems not very regularly shaped are found on the higher hills between the Sitang and Salween rivers, and on the range which skirts the coast of the Tenasserim provinces. The wood is close-grained, and may prove a substitute for boxwood
3522. [10435]	Tinyooben .	Pinus Massoniana, Lamb.		6	50	The pines of British Burmah. Pinus Massoniana is a moderate-sized tree, found in the forest of
3523. [10436]	Tinyooben .	Pinus Khasyana . .		9	80	Dipterocarpus grandiflora (Eng

NATIONAL ARCHIVES OF INDIA

Number	BURMESE NAME	SYSTEMATIC NAME OF TREE	Weight of 1 cubic ft. in lbs.	Average size of full-grown trees on good soil		REMARKS
				Girth measured at 6 ft. from ground	Length of trunk to first branch	
						forest), east of the Salween river. Spars of this species have occasionally been brought down to Maulmain P. Khasyana is found on the hills between the Sitang and Salween rivers, at an elevation exceeding 3,000 ft. It is a stately tree, sometimes as high as 200 ft. to the top; but owing to the difficulties of transport from these hills, no timber of this species has as yet been brought to Maulmain. The wood of both kinds is very rich in resin
3524. [10437]	Kanazoe . .	Pierardia sapida . .	61	4	15	A small tree, wood not used
3525. [10438]	Nasha . . .	Phyllanthus sp. . .	35	6	30	A light-coloured wood, exhibiting a natural shine or polish when planed
3526. [10439]	Yagine . .	Rottlera sp. . .	35	6	30	A moderate-sized tree, common on the low ground near streams. Br. weight from 153 to 170 lbs.
3527. [10440]	Bamau . . .	Unknown	52	6	30	Close-grained, possibly a substitute for boxwood, prized by Karens for bows
3528. [10441]	Palawah . .	Do.	52	6	45	A beautiful red, but heavy wood
3529. [10442]	Nattamin . .	Do.	33	6	60	Wood loose-grained, reddish grey, recommended for cigar boxes. Br. weight 129 lbs.
3530. [10443]	Moondein . .	Do. . . .	33 to 38	10	50	Wood fine-grained, light, recommended for furniture. Br. weight 121 lbs.
3531. [10444]	Koothan . .	Do.	28	6	40	A loose-grained light wood, recommended for packing cases, used for blackboards in Burmese schools. Br. weight 114 lbs.
3532. [10445]	Thakooppo .	Stereospermum chelonioides		5	30	Wood used in house-building
3533. [10446]	Maneioga . .	Carallia integerrima, Dc.	60	10	50	A large tree, common north of Rangoon and throughout Pegu. Wood of a peculiar structure, thick medullar rays going through from the centre to the circumference; colour red; may possibly be found useful for cigar boxes. Used for planks and rice-pounders
3534. [10447]	Thitnee . .	Unknown	80	8	50	A beautifully red, but heavy wood
3535. [10448]	Lumbo . . .	Buchanania latifolia .	36	6	30	A soft light wood, not used
3536. [10449]	Chloctni . .	Eriolœna sp.? . .				A red wood, used like Dwanee (No. 3436)
3537. [10450]	Thitpagan . .	Pongamia sp. . .		9	40	A soft wood, said to be useless
3538. [10451]	Kaungmhoo .	Dipterocarpus sp. .		12	100	Trees of an immense size, used for canoes
3539. [10452]	Katsitka . .	Unknown		6	30	A red wood, abundant in the forests north of Rangoon, used for boats; said to last from 5 to 6 years
3540. [10453]	Anambo . .	Henslowia paniculata, Migu.		9	50	A reddish-coloured wood, not straight-grained; used occasionally for cart-wheels, mostly for firewood

NATIONAL ARCHIVES OF INDIA

WOODS FROM MOULMEIN.

(*Continued from page* 161.)

3541. [7632] Young Zalai (*Garcinia mangostana*).

This wood is made use of for ordinary house-building purposes. Fruit edible.

3542. [7633] Dain Tha (*Moringa pterygosperma*).

Flowers, bark, and root used medicinally. Wood made into dolls.

3543. [10466] Mya Ya Ngai (*Grewia micrococos*).

This wood is used for ordinary house-building purposes.

3544 [10467] Pyen Ma Nee, or Jarue of Chittagong (*Lagerstræmia regina*).

Wood used for boats and carts, also for flooring houses.

3545. [10468] Ein Gyin (*Dipterocarpus vatica*).

A very strong durable wood, as strong as Pyengado; when kept long in water it is said to become petrified.

3546. [10469] Phangah (*Terminalia chebula*).

Is very hard and heavy. Used to make rice pounders, furniture, &c.

3547. [7634] Kamala (*Sonneratia apetala*).

An inferior wood for boats, which last but two or three years.

3548 [10470] La Moo (*Sonneratia acida*).

The fruit is an article of food.

3549. [7635] Ya Tha Nat.

Ditto ditto.

3550. [10471] Ka Na Zo (*Pierardia sapida*).

A very hard wood, Used for wheel axles.

3551. [7636] Kea Nan.

Red wood; used generally by carpenters.

3552. [7637] Tha-ran (*Grewia* sp.).

A wood used to make dancing dolls.

3553. [7638] Ya-tha-pya.

The fruit is edible. Used for house-building purposes.

3554. [7639] Oan Naih.

Ditto.

3555. [7640] Bon Sone.

Ditto.

3556. [7641] Thin-win.

The root is used medicinally.

3557 [10472] Phàt Than.

Used for chisel handles.

3558. [7642] Koung Mhoo (*Vatica* sp.).

Used for making carts and boats.

3559. [7643] Pyen Ma Phoo (*Lagerstrœmia* sp.).

Used for making oars and for rough house-building.

3560. [7644] Konk Koe (*Acacia* sp.).

This wood is made into boats, carts, and other ordinary house-building material.

3561. [10473] Myouk Shaw (*Dalbergia* sp.).

This wood is used in ordinary house-building.

3562. [10474] Kyee (*Cassia sumatrana*).

This wood is used in ordinary house-building.

3563. [7645] Mazalee (*Cassia florida*).

This wood is used in ordinary house-building.

3564. [7969] Tha Khoot.

This wood is used in ordinary house-building.

3565. [7646] Zinpyun Gyee.

This wood is used in ordinary house-building.

3566. [7647] Ya Ka Ngine.

This wood is used in ordinary house-building.

3567. [7648] Ouk Kyine.

This wood is used in ordinary house-building.

3568. [7649] Yamani.

This wood is used in ordinary house-building.

3569. [7650] Thapya (*Water Dalbergia*).

This wood is used in ordinary house-bullding.

3570. [7651] Koan Tha Nath (*Cordia myxa*).

The leaf is made into cigar-wrappers.

3571. [7652] Tha Yat (*Mangifera indica*).

Fruit is eaten.

3572. [7653] Koun-Soay-dan.

Ditto.

NATIONAL ARCHIVES OF INDIA

3573. [7654] Thet Kon Nyen.

Fruit is eaten.

3574. [7655] Tsan-saypen.

Used for ordinary house-building purposes. Leaf is eaten boiled as greens.

3575. [7656] Ahline Ngai.

Ditto.

3576. [10475] Manee Auka.

Bark is used medicinally.

3577. [10476] Ngoo Tha (*Cassia* sp.)

Made into house-posts. Fruit and bark used medicinally.

3578. [7657] Youg Tha Ngai (*Arbus?*)

Used as ordinary building materials.

3579. [7658] Tha-man-tha.

Ditto.

3580. [7659] Kaboung (*Strychnos Nux vomica*).

Fruit used as medicine.

3581. [7660] Mai Kin.

Used in ordinary building material. Fruit used as medicine.

3582. [7661] Yamana (*Gmelina arborea*).

Ditto.

3583. [10477] Kay Yoob.

Ditto.

3584. [10478] Nat Gyee.

Used for posts and knife handles.

3585. [10479] Anan Pho (*Gordonia* sp.).

A strong wood, good for building purposes.

3586. [10480] Yin Yo.

Ditto.

3587. [7662] Sha Bya Gyin (*Eugenia* sp.).

Wood soft; used as an ordinary building material.

3588. [10481] Pyen-ma-zoat Gyee (*Lagerstræmia* sp.).

Ditto.

3589. [10482] Pune Tha.

Ditto.

3590. [7663] Paran Tha.

Wood soft; used as an ordinary building material.

3591. [10483] Ma-oo-tha (*Nauclea cadomba*).

Used for building purposes.

3592. [7664] Tsat Tha.

Ditto.

3593. [7665] Dhane Eha (*Moringa pterygosperma*).

Ditto.

3594. [7234] Yin-gat? (*Gardinia coronaria*).

Ditto. Fruit edible.

3595. [10484] Mayan (*Mangifera oppositifolia*).

Ditto.

3596. [10485] Padouk (*Pterocarpus Dalbergioides*).

A very strong wood, admirable for furniture, used by the Burmese to make their musical instruments.

3597. [7666] Kya Zo.

Used for building material.

3598. [7667] Na Bai (*Odina Wodier*).

A red wood. Bark used medicinally.

3599. [7668] Nyoung Lan.

Used for building material.

3600. [10486] Tha Bya Nee (Red Jambo).

Ditto.

3601. [10497] Nyoay Sha.

Ditto.

3602. [7974] Monk Kyan (*Homalium tomentosum*).

A strong wood for any ordinary purpose.

3603. [7669] Nga Thingyee (*Ficus cordifolia?*).

Ditto.

3604. [10487] Nyoung Tha.

Ditto.

3605. [10488] Woot Tha.

Ditto.

3606. [10489] Kya Ya (*Mimusops elengi*).

Ditto. The flower is used medicinally and for scent.

NATIONAL ARCHIVES OF INDIA

3607. [7670] That Pan (*Bombax* sp.).

A strong wood for any ordinary purpose. The flower is used medicinally and for scent.

3608. [7671] Tha Bya (*Eugenia* sp.).

Ditto.

3609. [7672] Zin Pyun Ngan (*Dillenia speciosa*).

Ditto. Fruit edible.

3610. [7673] Ma Shoay (*Bignonia stipulata*).

A strong wood for any ordinary purpose. Fruit edible.

3611. [7674] Tonk Tsa (*Vitex arborea*).

Ditto.

3612. [7675] Ah See Eha.

Wood hard. Used for making musical instruments.

3613. [10490] Than-that-gyee.

Used for building materials.

3614. [7676] That Yat (*Mangifera indica*).

Ditto. Fruit edible.

3615. [7677] Tseek Tha (*Acacia sirissa*).

Wood reddish colour. Used for furniture.

3616. [7678] Ein Win.

Used for all ordinary purposes of building.

3617. [7679] Thet Lendah.

Ditto.

3618. [10495] Wiha Oung.

Ditto.

3619. [7680] Kha Gyee (*Strychnos Nux vomica*).

Ditto. Fruit used medicinally.

3620. [10491] Zangyeeoat-doup (Oak-leaved Polypod).

Ditto.

3621. [7681] Ah Nan (*Cyrtophyllum fragrans*).

A strong wood, good for building purposes.

3622. [7682] Kyan-pho.

Ditto.

3623. [7683] Za Padrup.

Ditto.

3624. [7684] Yendike (*Dalbergia* sp.).

A hard heavy black wood, useful for furniture.

3625. [7685] Bha Woon (*Grewia* sp.).

Converted into planks for building.

3626. [10492] Tngtha (*Dipterocarpus grandis*).

Ditto.

3627. [10493] Tsouk Yoa (*Dalbergia alata*).

Used for tool handles.

3628. [7686] Toung Ma Yoa.

Wood smooth. Used generally for Burmese slate or writing boards.

3629. [10494] Thit Nee.

Converted into boxes, tables, &c. &c.

3630. [7687] Thit Nya (*Castanea martabanica*).

The fruit eaten exactly like chestnuts.

3631. [7688] Pani Nai, vulgo 'Jack tree' (*Artocarpus integrifolius*).

Fruit eaten. Wood yellow. Used to dye the yellow Pongyee (Burmese Priest) cloths.

SPECIMENS OF WOODS FROM MALACCA.

Forwarded by C. EVANS, Esq.

3632. [2465] Marabow.

3633. [2466] Billian Wangee.

3634. [2467] Madang Katana.

3635. [2468] Pannaga.

These four species are the very best description of timber procurable in Madras, and command a market at very high prices. They are strong, solid, and very durable, being principally used for girders, rafters, joists, door and window posts, and timber for bridges, standing the sudden changes of the climate remarkably well. The Marabow is also used for furniture. Not subject to dry rot, and when well seasoned is known to last nearly half a century.

3636. [2469] Patalin.

3637. [2470] Klat Mera.

3638. [2471] Kasso.

These hold a second position in the art of house-building, but are much more commonly used, being more abundant and easily procurable. *Nos. 3636 and 3637* are commonly used for door and window frames, *but No. 3637* is apt to split in the sun, consequently is always used within doors in the Straits.

3639. [2472] Tumboosoo.

3640. [2473] Giam.

3641. [2474] Brombong.

Best and most durable species of timber, known to resist the effects of a damp soil; invariably used for

NATIONAL ARCHIVES OF INDIA

foundation piles, palisading and supporting piles for bridges; Nos. 3639 and 3670 sawn into planks are the very best description of timber that can be used for the platform of a timber bridge supporting a gravel road.

3642. [2475] Traling.

3643. [2476] Marsawa.

3644. [2477] Pasal Antoo.

These three species grow to an enormous height and girth, with huge buttresses, which are eagerly sought for solid cart-wheels, in common use among the Malays, and the trunks are converted into jaloors or river boats, consisting of one solid block scooped out in the shape of a canoe.

3645. [2478] Bintangore Batoo.

3646. [2479] Bintangore Akar.

3647. [2480] Bintangore Boonoot.

Tough, hard, crooked-grained, fibrous wood. In general use for masts and spars of vessels. No. 3645 is often used for purlins among the natives.

3648. [2481] Marpoyan.

3649. [2482] Marbatoo.

3650. [2483] Marpadang.

Used for fishing stakes, piles, and is the best description of fuel for steamers. Makes very good charcoal for a blacksmith's forge.

3651. [2484] Madang Kuniet.

3652. [2485] Madang Pao.

3653. [2486] Madang Klade.

3654. [2847] Madang Lawang.

3655. [2488] Madang Saraya Batoo.

3656. [2489] Marantee.

3657. [2490] Niatoo.

3658. [2491] Doorian Doorian.

In general use for planks, tile laths, except No. 3651, which being soft and cohesive is used by the Chinese for carvings. No. 3656 is very inferior in quality, and is only used by the poorer classes, great quantities being brought down to market as floats for heavier descriptions of timber.

3659. [2492] Kampas.

Used as charcoal, which is of excellent quality and much used by the tin miners.

3660. [2493] Klaydang.

Used principally by the Chinese for coffins, and planking vessels.

3661. [2494] Minia Jantan.

The wood oil of commerce is tapped from this tree, and it yields tolerably good planks for bridges.

3662. [2495] Kranjee.

A good, heavy, valuable timber, somewhat like iron wood. Used for machinery, mortar and pestle, &c.

3663. [2496] Alban.

Used for ribs of vessels and boats.

3664. [2497] Ensanna.

Close-grained, mottled, and valuable wood for furniture; it takes a high polish and when well seasoned does not warp.

3665. [2498] Karantey.

Employed for gun stocks. It is a white soft wood, close and compact, and fit for turning purposes.

3666. [2499] Gelotong.

Light, pithy wood, coarse-grained and porous. Used for sandals, stoppers for bottles, and covers for cooking utensils.

3667. [2500] Neepis Koolit.

Light and pliant. Used for oars and buggy shafts.

3668. [2500A] Pangarawan.

A very valuable tree; the bark is used in lieu of planks by the poorer classes of natives. The trunk yields excellent planks for shipbuilding; and the valuable gum known in commerce as Damar Matakooching, or Gum Copal, is procured from this tree.

3669. [7986] Rambey Dahoon.

Good for planks, and the tree yields Damar Batoo, a coarse resin, much used in manufacturing torches.

3670. [7987] Rangas.

Red wood. Much used for furniture.

3671. [7987A] Kamooning.

This tree is not indigenous to the place, but thrives well on private grounds. It yields superior planks for manufacturing small boxes, and the roots, not unlike Kayoo bookoo, are made into handles for krisses.

3672. [7988] Glam Tambaga.

Used for piles and posts under water: the paper-like bark is much used by the Malays in caulking the seams of vessels.

SPECIMENS OF WOODS FROM THE MALAYAN PENINSULA.

3673. [79] Garro, Malay Peninsula.

Used for burning as incense. TAN KIM SENG.

3674. [2464] Kaimooning, Do.

Scarce. Hard and close-grained, resembling box. H. H. INCHE WAN ABOO BAKAR.

3675. [2445] Moodang Tandoo (Sipoo?)

Used for furniture, and doors and windows. Do.

NATIONAL ARCHIVES OF INDIA

3676. [2448] Maraboo, Malay Peninsula.

Wheels, buggy shafts, and junks' masts. H. H. INCHE WAN ABOO BAKAR.

3677. [2453] Kranjee.

Junks' masts.

3678. [2449] Mursawah.

Junks' masts.

3679. [2447] Julatong.

Used for making coffins and boxes.

3680. [2458] Jamah.

Common house work, doors, &c.

3681. [2451] Pewang.

Boat building.

3682. [2454] Rengas.

Furniture.

3683. [2455] Serayah.

Doors, windows, and ordinary floors.

3684. [2446] Mudang.

House fittings.

3685. [2450] Kuning.

Boat purposes.

3686. [2457] Samarang.

House fittings.

3687. [7984] Casuarina (*Casuarina*), Singapore grown.

Felloes for wheels and spokes. COL. COLLYER.

3688. [7983] Mangrove (*Rhizophora mangle*), Salt swamp.

Used for piles.

3689. [2459] Pinagah.

Used for boats' knees.

3690. [7985] Kompas.

House building.

3691. [7982] Teak (*Tectona grandis*).

Building.

3692. [7981] Daroo.

Do.

3693. [2460] Malow.

Junks, masts, &c. HON. COL. CAVANAGH.

3694. [2461] Tampenis, Malay Peninsula.

House building. HON. COL. CAVANAGH.

3695. [2462] Balow.

Piles and junks' masts.

3696. [2463] Changal.

Ships' lower masts. G. ANGUS, Esq.

3697. [2452] Trabang.

Ships' lower masts.

3698. [7238] Cladang.

Doors and windows.

3699. [2456] Cladang.

Used for carvings.

SPECIMENS OF WOODS FROM THE FOREST ON PINANG HILL.

HON. MAJOR MAN.

3700. [9418] Pulai.

3701. [7070] Bahkoh.

3702. [7061] Champada.

3703. [9419] Bayor.

3704. [9239] Bayang Bada.

3705. [7064] Jurai.

3706. [7068] Nangka.

3707. [9240] Brangan.

3708. [7065] Gaham Bada.

3709. [7069] Tumusu.

3710. [7067] Bia-babi.

3711. [7080] Mungkudu (*Morinda umbellata*).

3712. [7091] Ahtow.

3713. [7078] Kampas.

3714. [7074] Tumpang.

3715. [7066] Rungas.

3716. [7073] Juntang-malah.

3717. [7061] Champada Ayer.

3718. [7062] Tampineh.

3719. [9241] Nangka pipet.

NATIONAL ARCHIVES OF INDIA

3720. [7072] Klat.

3721. [7076] Jelutong.

3722. [7063] Jong-purlis.

3723. [7075] Jermalang.

3724. [7090] Kumpas.

3725. [7088] Jelatoh.

3726. [7086] Dammer-laut.

3727. [7093] Gading-gading.

3728. [7087] Koolin.

3729. [7079] Pisang-pisang.

3730. [7071] Murbow.

3731. [7089] Bintaling.

3732. [7092] Madang-Serai.

3733. [7077] Sittola.

Subdivision C.—vi. (3) PREPARED WOODS.

Of this there is only one representative.

Specimens of wood prepared with CULLEN'S patent composition. MR. ADAMS, *Bow, London.*

3735. [9397] A piece of Deodar wood, or Himalaya pine, not prepared with the composition.

3736. [9396] A piece of wood cut from the same log as No. 3735, and coated with the composition.

These two specimens were buried in a white ants' nest, at Meean Meer, for the space of five months, from March to July, 1860. At the end of this period, No. 3735, which had not been previously coated, was nearly destroyed by the ants; and No. 3736, which had been prepared with the composition, was in a perfect state.

SECTION VII.—MISCELLANEOUS SUBSTANCES.

1. *Substances used as Soap.*

Of substances belonging to this division, the Indian soap berry is worthy of more attention than it has yet received. It is admirably adapted for cleaning silks and other fabrics, the colours of which are likely to be damaged by the use of ordinary soap. It besides readily forms a lather with water, however hard.

3737. [9925] Soap berries from *Sapindus emarginatus*, Calcutta.

The natives use them as soap for washing the hair, silk, &c. Agitated with hot water they form suds. Price 4 annas per lb.

3738. [4793] Kinmon (*Mimosa abstergens* or *Acacia concinna*), Burmah.

3739. [6047] Sikakai (*do.*), Ahmedabad.

A considerable trade is carried on in some parts of India in the pods of this plant, which resemble the soap-nut, and like it are used for washing the head.

2. *Substances used mechanically.*

3740. [4978] Aerial roots of Banyan (*Ficus indica*), Madras. DR. SHORTT.

Used as a tooth brush.

3. *Seeds employed for Bracelets and other Ornamental Purposes.*

3741. [7157] Kooneh (*Abrus precatorius*) (white), Calcutta.

3742. [6222] Kooneh (red), Calcutta.

3743. [7013] Kooneh, Bombay.

Of the seeds of this creeper there are several varieties, white, scarlet, and black. Those of a bright scarlet colour, with a black speck at the tops, are used not only for ornament, but also as weights by jewellers and druggists.

3744. [4923] Mimosa seeds (*Desmanthus virgatus*), Chingleput. DR. SHORTT.

Amongst miscellaneous substances are also placed the following:—

Charcoal.

3745. [7233] Charcoal fire balls, Vizagapatam.

3746. [4893] Mudar root charcoal (*Calotropis gigantea*), Chingleput. DR. SHORTT.

3747. [7056] Charcoal, Ahmedabad.

3748. [7059] Charcoal of *Euphorbia antiquorum*, Ahmedabad.

3749. [7057] Charcoal (*Bassia latifolia*), Ahmedabad.

3750. [7058] Babool charcoal (*Acacia arabica*), Bombay.

3751. [6431] Buglar tree bark, Chota Nagpore.

3752. [6437] Buglar tree bark powdered, Chota Nagpore.

This is used for uniting wood, as a substitute for glue.

NATIONAL ARCHIVES OF INDIA

X.—GENERAL MANUFACTURE FROM WOOD (*not being Furniture*).

I.—TURNERY.—*Plain and lacquered.*

From LAHORE. Per LAHORE COMMITTEE.

3753–4. [5845–6] Two betel stands.

3755–8. [5841–4] Four large circular boxes.

3759–66. [5833–40] Eight small circular boxes.

3767–9. [5830–2] Three flower vases.

3770. [5829] Pair candlesticks.

3771–5. [5851–5] Five cigar cases.

3776–7. [5825–6] Pen-cases.

3778–82. [5856–60] Five plates.

3783. [5847] Glass-shaped vessel with cover.

3784. [5848] Do. without cover.

3785. [5850] Ten toys.

These articles have been manufactured by the turners of Pák Puttan in the Googaria District.

From LAHORE. Contributed by R. TAYLOR, Esq.

3786. [5433] Table, lacquered.

3787. [5434] Candlestick.

From UMRITSUR. Per LAHORE COMMITTEE.

3788-89. [1509-10] Vases, black and silver, ornamented in chemical amalgam.

3790-1. [1537-8] Two wooden cups.

3792. [1639] Eighty-two specimens of coloured turnery (toys, &c.).

3793. [7998] Set of black japanned articles.

3794–5. [5752–3] Pen-tray and workbox, lacquered, Meerut. SYUD HOSSEIN ALLEE KHAN.

3796. [8108] Boxes, vases, and other articles made of lac at Beerbhoom. GOVERNMENT of INDIA.

From DARJEELING. DR. A. CAMPBELL.

3797-8. [3164-5] Drinking cups of Lamas.

3799. [3166] Two wooden spice boxes.

3800. [3169] Wooden bowls.

3801. [3162] Thibetan cup.

3802. [3170] Four meal boxes.

3803. [3185] Wooden bowl.

3804. [3179] Wooden cup.

From HYDERABAD, SINDE. Per LOCAL COMMITTEE.

3805–6. [1076–71] Circular boxes.

3807–8. [1074–5] Cigar cases.

3809. [1064] Wooden boxes.

3810–11. [1065–6] Nests of boxes.

3812–3. [1067–8] Two boxes melon-shaped.

3814. [1069] Nest of seven boxes.

3815–16. [1072–3] Flower vases with stands.

3817. [2516] Painted box, Sinde. BOMBAY GOVERNMENT.

From SAWUNT WARREE. Per LOCAL COMMITTEE.

3818. [4715] Pen-tray.

3819. [4716] Pen-cases.

3820. [4721] Churka model, lacquered.

3821. [4722] Two pots.

3822. [4724] Egg cups.

3823. [4725] Pólpat and Satnee.

3824. [4726] Mortar and pestle.

3825. [4728] Two lacquered toys.

3826. [10508] Two trays, lacquered ware, Bangapully, Kurnool, Madras. GOVERNMENT of MADRAS.

NATIONAL ARCHIVES OF INDIA

3827. [10509] Two boxes lacquered ware, Bangapully, Kurnool, Madras. GOVERNMENT of MADRAS.

3828. [2686] Toys, lacquered, various, Bangalore, Mysore. GOVERNMENT of MYSORE.

From BURMAH. Contributed by Messrs. HALLIDAY, FOX & Co. Rangoon.

3829–30. [4482–4494] Boxes.

3831. [4495] Nest of nineteen boxes.

3832. [4499] Nests of boxes.

3833–4. [4477–8] Two water cups.

From BURMAH. Per DR. M'PHERSON, Madras.

3835. [469] Knitting box, Canara.

3836. [483] Bowls, Burmese.

3837. [6322] Wooden boxes, turned, supposed to be tamarind, Tringanu. Turned and presented by H. H. the RAJAH.

3838. [6323] Lacquered tray, Singapore. COL. COLLYER.

3839. [6311] Box and cup for betel nut, Singapore. HON. COL. CAVANAGH.

3840. [6749] Box lacquered in imitation of Mangosteen, Do. Do.

3841. [6321] Box and cup for betel nut, Singapore. H. H. INCHE WAN ABOO BAKAR.

3842. [6327] Circular box, Palembang, Sumatra. Do. Do.

II.—CARVINGS IN SANDALWOOD ETC.

3843. [3438] Spoon, Umritsur. RAJAH of PUTTIALA.

3844. [1501] Box, Puttiala. Do.

3845. [968] Walking-stick, Do. Do.

3846. [3041] Large box, with pictures on lid, Delhi. ISHMAIL KHAN.

3847–8. [10048–9] Ten spoons, Budaon. GOVERNMENT of INDIA.

3849. [5155] Two ebony necklaces and bracelets, Moonghyr. Do.

3850. [10030] Pen-box, Bijnour. ABDOOLA of NUGEENA.

3851–2–3. [5356–7–9] Ebony combs, Bijnour. SAADUT ALLEE.

From BIJNOUR. Contributed by KURREEM BUX.

3854–8. [5360–1–2–4–5] Ebony combs.

3859. [5352] Carved ebony casket.

3860. [5353] Carved ebony writing-case.

3861. [5354] Carved ebony casket.

From BOMBAY. BOMBAY GOVERNMENT. Per J. MACFARLANE, Esq.

3862. [355] Glove-box.

3863. [343] Portfolio.

3864. [306] Book-stand.

3865. [313] Portfolio.

3866. [354] Glove-box.

3867. [524] Card-basket.

3868. [286] Card-case.

3869. [285] Card-case.

3870. [346] Card-basket.

3871. [270] Writing-desk.

3872. [338] Writing-desk.

3873. [523] Glove-box.

From COOMPTA, MALABAR. Contributor, JAMSETJEE HEERJEE PARSEE.

3874. [316] Cabinet.

3875. [1243] Knitting-box.

3876. [320] Knitting-box.

3877. [1240] Knitting-box.

3878. [1241] Knitting-box.

3879. [1239] Knitting-box.

3880. [317] Envelope-case.

3881. [318] Envelope-case.

3882. [1333] Large box.

3883. [1242] Knitting-box.

3884. [319] Knitting-box.

3885. [334] Writing-desk.

3886. [1244] Twenty-four paper-knives.

NATIONAL ARCHIVES OF INDIA

From SURAT. BOMBAY GOVERNMENT.

3887–3895. [321–329] Nine knitting-boxes.

3896–7. [307–8] Two writing-desks.

3898–3900. [310–312] Three card-cases.

3901–3. [330–2] Three card-baskets.

3904. [303] Work-box.

3905. [305] Inkstand.

3906. [309] Chessboard.

3907. [304] Glove-box.

3908. [648] Carved writing-case, Kutch. H.H. the RAO of KUTCH.

3909. [4731] Pen-case, Madras.

3910. [4733] Tray, Madras.

3911. [2521] Chess-table, North Canara. GOVERNMENT of MADRAS.

3912. [2522] Paper-knives, Do. Do.

3913. [10750] Large box, Do. Do.

3914–15. [443–4] Boxes, Kurnool. DR. M'PHERSON.

3916. [423] Four card-cases, Vizagapatam. Do.

From MYSORE.

3917. [2714] Pen-rack, Bangalore, J. LACEY, Esq.

3918. [2662] Pen-case, Do. Do.

3919. [2675] Card-case, Do. Do.

3920. [2711] Work-box, Do. Do.

3921. [2668] Walking-stick, GOVERNMENT of MYSORE.

3922. [2669] Walking-stick, KITCHA SHETTY.

3923–4. [2663–4] Fly fans, GOVERNMENT of MYSORE.

3925. [2674] Paper-knife, J. LACEY, Esq.

3926. [2666] Album-cover, GOVERNMENT of MYSORE.

3927. [2667] Album-cover, Bangalore, GOVERNMENT of MYSORE.

3928. [2665] Book-cover, Do. Do.

3929. [2673] Paper-knife, J. LACEY, Esq.

3930. [2677] Portfolio, Do. Do.

3931. [2671] Bracelet, Do. Do.

3932. [2672] Bracelet, Do. Do.

3933. [2712] Box, Do. Do.

3934. [2713] Envelope-case, Do. Do.

3935. [569] Box, Do. CAPT. PUCKLE.

3936. [434] Two picture frames, Malacca. DR. M'PHERSON.

3937. [471] Fan, British Burmah. Do.

3938. [472] Paper-knife, Do. Do.

3939. [469] Bracelet, Do. Do.

MODELS CARVED IN WOOD.

3940. [8158] Model of Benares Chuttaree, in logwood, Benares.

3941. [4698] Model Hindoo temple, sandalwood, Do. RAJAH DEONARAIN SING.

3942. [8159] Model Rulianishwar temple.

3943. [7080] Model Hindoo temple, sandal-wood.

3944. [2579] Model Minar, in blackwood, Ahmedabad.

3945. [449] Model Malacca temple, British Burmah. DR. M'PHERSON.

3946. [5896] Model Tasoung or pavilion, Pegu. COL. PHAYRE.

3947. [6743] Model Malay house, Malacca. HON. CAPT. BURN.

3948. [6744] Model Pondoh Eery (Hutseim), Malacca. A. A. DE WIND, Esq.

XII. — MANUFACTURES FROM STRAW, GRASS, AND OTHER SIMILAR MATERIALS.

3949. [5174] Reeds (*Saccharum* sp.), used as a substitute for quills, Calcutta.

NATIONAL ARCHIVES OF INDIA

3950. [5167] Hand fan (*Saccharum* sp.). A. M. DOWLEANS, Esq.

3951. [5168] Hand fan, Do. Do.

3952. [5169] Hand fan, Do. Do.

3953. [5170] Hand fan, Do. Do.

3954. [5171] Hand fan, Do. Do.

3955. [3155] Palm-leaf fans, Hooghly.

3956. [3156] Palm-leaf fans, Do.

3957. [2901] Basket of straw, Moonghyr. GOVERNMENT of INDIA.

3958. [2902] Basket of straw, Do. Do.

3959. [2903] Basket of straw, Do. Do.

3960. [2904] Basket of straw, Do. Do.

3961. [5163] Set of table mats, bamboo, Do. Do.

3962. [5164] Set of table mats, bamboo, Do. Do.

3963. [5165] Set of table mats, bamboo, Do. Do.

3964. [5166] Fan with blue edges, Do. Do.

3965. [6482] Leaf cloak worn by natives in wet weather, Chota Nagpore.

The Chookul or Choput is in general use amongst the natives in Manbhoom during wet weather.*

3966. [2688] Fancy worked basket, Darjeeling. DR. CAMPBELL.

3967. [3159] Basket for infusing Murwa, Do. Do.

3968. [3176] Three baskets, Do. Do.

3969. [3171] Basket, Do. Do.

3970. [4422] Basket, Do. Do.

3971. [4428] Basket (curious manufacture), Do. Do.

3972. [4429] Basket, Do. Do. Do.

3973. [4752] Basket, Darjeeling. DR. CAMPBELL.

3974–8. [4423–27] Five bamboo tubs, Darjeeling. DR. CAMPBELL.

3979. [3178] Large straw hats, Do. Do.

3980. [4269] Straw hat and waterproof cover, Do. Do.

3981. [4431] Halter of bamboo, Do. Do.

3982–5. [5908–11] Grass basket, Nepal. H.H. SIR JUNG BAHADOOR, K.C.B.

3986–7. [5539–40] Kuskus fans, Ulwar. H.H. the MAHARAJAH.

3988. [4730] Nest of four baskets, Sawunt Warree. GOVERNMENT of BOMBAY.

3989. [2888] Four Kuskus baskets, Poonah. Do.

3990. [4866] Basket made from the leaves of the *Cocos nucifera*, Chingleput. DR. SHORTT.

3991. [4868] Basket made of wild date leaves, Do. Do.

3992. [600] Two leaf caps, Salem, Madras.

3993–6. [9349–52] Four do., S. Canara, Do. V. P. COELHO, Esq.

3997. [2710] Nest of bamboo boxes, Bangalore. J. LACEY, Esq.

3998. [3735] Betel boxes, Burmah. *Calcutta Committee.* GOVERNMENT of INDIA.

3999. [3737] Betel boxes, Do. Do.

The framework of these boxes is formed of thin strips of bamboo plaited into the shape of a box; the basket-work foundation is then coated with 'Theetsee,' painted and varnished. Every Burman has one or more of these shaped boxes to hold his betel, cigars, money, &c.; whilst the women, in addition to the above purposes, use them as jewel and dressing-cases. The specimens exhibited are the finest procurable, and come from Pagan, in Burmah, celebrated for the manufacture of these boxes. Inferior sorts are made all over Pegu and in the Shan States. The higher classes of Burmese use boxes of silver, whilst the nobles of the Court of Ava use gold.*

4000. [4455] Straw hat, Rangoon. Messrs. HALLIDAY, FOX & Co.

4001. [6709] Mat of Pandong rush, Singapore. COL. COLLYER.

4002. [6320] Cocoa-nut colander, Do. G. ANGUS, Esq.

* Local Committee, *Chota Nagpore.*

* Local Committee, *Rangoon.*

NATIONAL ARCHIVES OF INDIA

4003. [4102] Two water buckets of the spathe of the Nibong (*Nipa fruticans*), Penang.

4004. [4752] One water bucket of basket-work, Rangoon. Messrs. HALLIDAY, FOX & Co.

4005. [4092] Work-basket of *Pandanus odoratissimus*, Province Wellesley. PENANG COMMITTEE.

4006–7. [4104–6] Three plate covers of do., Province Wellesley, Penang.

4008. [4110] Bird cage, Province Wellesley, Penang.

4009. [4088] Mat bags of Mandrong rush, Province Wellesley, Penang.

4010. [6364] Tapeesan, or strainer, contributed by T. NEUBRONNER, Esq., Malacca.

4011. [6368] Kokoosan or bucket, Malacca.

4012. [6369] Eery sieve or winnower, Malacca.

4013. [6370] Neeroo, Do. Do.

4014. [6372] Sarenda or Malay fisherman's hat, Malacca. HON. CAPT. BURN.

4015. [6363] Sikole, Malacca. Contributed by CHEE YAM CHUAN.

4016. [6365] Tapeesan, Malacca.

4017. [6366] Gayong or ladle, Malacca.

SECTION D.—PERFUMERY ETC.

The value of the Perfumery of all kinds exported from India is shown by the following table.

TABLE SHOWING THE VALUE OF PERFUMERY EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED						TOTAL EXPORTED TO ALL PARTS
		UNITED KINGDOM	FRANCE	OTHER PARTS OF EUROPE	CHINA	ARABIAN AND PERSIAN GULFS	OTHER PARTS	
		Value	Value	Value	Value	Value	Value	Value
		£	£	£	£	£	£	£
1857-58	Bengal	16	1	..	..	9	33	59
	Madras	..	..	..	..	..	..	..
	Bombay	2	..	..	1,460	122	1,253	2,837
	ALL INDIA	18	1	..	1,460	131	1,286*	2,896
1858-59	Bengal	28	..	..	4	29	18	79
	Madras	15	..	..	..	25	22	62
	Bombay	12	..	..	4,315	37	1,484	5,848
	ALL INDIA	55	..	..	4,319	91	1,524*	5,989
1859-60	Bengal	283	7	..	9	20	36	355
	Madras	..	..	..	..	..	..	..
	Bombay	7	..	..	9,326	30	688	10,051
	ALL INDIA	290	7	..	9,335	50	724*	10,406
1860-61	Bengal	156	..	..	84	80	87	407
	Madras	..	..	..	..	7	83	90
	Bombay	..	..	..	6,936	53	972	7,961
	ALL INDIA	156	..	..	7,020	140	1,142*	8,458

* Exported chiefly to Ceylon, Straits, Aden, and Africa.

I.—PERFUMES OF ANIMAL ORIGIN.

Under this division only two specimens are exhibited. Of these musk is the one of chief importance. The Table on next page indicates the value of that exported from India to all parts for the last four years.

4018. [1*] Musk (*Cervulus moschatus*), Nepal.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE VALUE OF MUSK EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED						TOTAL EXPORTED TO ALL PARTS
		UNITED KINGDOM	FRANCE	OTHER PARTS OF EUROPE	CHINA	ARABIAN AND PERSIAN GULFS	OTHER PARTS	
		Value	Value	Value	Value	Value	Value	Value
		£	£	£	£	£	£	£
1857–58	Bengal	1,142	42	..	..	..	700	1,884
	Madras	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	72	72
	ALL INDIA	1,142	42	..	..	..	772*	1,956
1858–59	Bengal	1,347	142	19	..	102	1,586	3,196
	Madras	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	40	40
	ALL INDIA	1,347	142	19	..	102	1,626*	3,236
1859–60	Bengal	1,304	..	..	..	160	328	1,792
	Madras	..	..	..	..	..	..	..
	Bombay	..	..	..	..	..	..	..
	ALL INDIA	1,304	..	..	..	160	328†	1,792
1860–61	Bengal	2,343	..	..	..	63	1,255	3,651
	Madras	..	..	..	..	..	..	..
	Bombay	..	..	..	20	..	..	20
	ALL INDIA	2,343	..	..	20	63	1,255‡	3,671

* The whole to Suez. † To Suez and Mauritius. ‡ Chiefly to Suez.

4019. [2*] Civet (*Viverra zibetha*), Madras.

II.—PERFUMES DERIVED FROM PLANTS ETC.

4020. [6421] Garoo wood (*Aquilaria agallocha*), Malacca. TAN KEM SING.

This wood has a great reputation in the East, and yields one of the kinds of Lign aloes.

4021. [2891] Agarbuttees or stick pastiles. Messrs. Doss & DEY.

4022. [4430] Pullitahs, stick pastiles, Darjeeling. DR. A. CAMPBELL.

4023. [2256] Citronelle oil. DR. CLEGHORN.

4024. [6446] Lemon grass oil, Chota Nagpore.

4025. [4081] Lemon grass from whence the oil is obtained, grown on the estate of AYER RAJAH, Penang.

4026. [4087] Citronelle grass, Penang.

4027. [5055] Roosa grass oil (*Andropogon nardoides*). DR. R. RIDDELL.

4028. [2128] Roosa grass oil, Jubbulpore.

This is also known under the names of grass oil and ginger grass oil. It has an an odour distinct from that of lemon grass and citronelle.

The specimen sent from Jubbulpore is not supposed to be the pure produce, as every endeavour to obtain unadulterated oil has failed. The best is said to be *pressed* at Ajmere. A miserable imitation of this oil is occasionally manufactured at Saugor. Twenty seers of the grass, which grows wild over the station and district, are mixed with two seers of common teel oil, and then slowly distilled. The oil thus becomes highly impregnated with the peculiar roosa flavour, and is sold as such at 4R. a seer. Grass oil is never taken internally by natives, but they have a great faith in it as a stimulant to the functions of the several organs, when rubbed on externally. They also use it as a liniment in chronic rheumatism and neuralgic pains, and though they place great reliance on its virtues, its expense prevents its being used generally. It has a fragrant aromatic smell, persistent, and very agreeable at first, but after a time the odour becomes unpleasant, and gives many people a feeling of sickness with headache. The natives use it for slight colds also, to excite perspiration, by rubbing in a couple of drachms on the chest before the fire or in the heat of the sun. From information collected, it appears that the pure unadulterated oil has been used by many European officers with most wonderful effect in cases of severe rheumatism; and indeed, such appears to have been the effect of its application, that two good rubbings of the pure oil on the part affected produced such severe burning as to render a third application almost impracticable. In the cases brought to notice, the second application was found sufficient to ensure perfect cure. §

4029–30. [2254–5] Essential oil of orange. BAULOO MODELIER.

4031. [10082] Essence of Bahoor. Messrs. Doss & DEY, Calcutta.

4032. [10081] Belgachia villa bouquet. Messrs. Doss & DEY.

4033. [10084] Hair dye. Messrs. Doss & DEY.

4034. [10083] Hair dye. Messrs. Doss & DEY.

4035. [4199] Patchouli oil (*Pogostemon patchouli*), Penang. GEORGE SCOTT, Esq.

4036. [4198] Nutmeg oil, Penang. GEO. SCOTT, Esq.

§ Local Committee, *Jubbulpore.*

NATIONAL ARCHIVES OF INDIA

4037. [6683] Nutmeg oil, Singapore. H. G. BROWN, Esq.

4038. [10686] Sandal wood oil (*Santalum album*), Mangalore. V. P. COELHO, Esq.

4039. [2749] Sandal wood oil, Astagram, Mysore.

4040. [6477] Khus ka attur (*Andropogon muricatum*), Lucknow.

Essential oil, extracted from the roots of *A. muricatum*. Bazaar price 2 rupees per tola. Grows spontaneously and plentifully in all the jungles of Oude. The roots are also used for making tatties, and leaves for thatching.

4041. [6478] Keoula ka attur (*Pandamus odoratissimus*), Lucknow.

Essential oil, extracted from the male flowers of *P. odoratissimus*. Bazaar price 2 rupees per tola (about a rupee's weight). Cultivated in very small quantities in Lucknow.

4042. [6475] Chamelee ka attur (*Jasminum grandiflorum*), Lucknow.

Essential oil, extracted from the petals of *J. grandiflorum*. Bazaar price 2 rupees per tola. This plant is extensively cultivated in gardens in Lucknow for the sake of its flowers.

4043. [6474] Motiah or Belak ka attur (*Jasminum sambac*), Lucknow.

Essential oil, extracted from the petals of *J. sambac*. Bazaar price 2 rupees per tola. Cultivated extensively in gardens in Lucknow for the sake of its flowers. Coloured red by means of dragon's blood.

4044. [6476] Hina or Mehudee ka attur (*Lawsonia inermis*), Lucknow.

Essential oil of the petals of *Lawsonia inermis*. Bazaar price 2 rupees per tola. Forms extensive hedges in all native gardens all over Oude. Coloured red by means of dragon's blood.

4045. [6479] Golab ka attur (*Rosa damascena*), Lucknow.

Essential oil of the petals of *Rosa damascena*. Bazaar price 2 rupees per tola. Cultivated in gardens in Lucknow for the sake of its flowers.

ATTURS

Contributed by KANNY LOLL DEY, Calcutta.

4046. [3254B] Champaka attur (*Michelia champaca*).

4047. [3256B] Kawrah ka attur (*Pandanus odoratissimus*).

4048. [3257B] Donna ka attur (*Artemisia indica*).

4049. [3258B] Nagkusur ka attur (*Mesua ferrea*).

4050. [3259B] Motia ka attur (*Jasminum hirsutum*).

4051. [3260B] Pucha put ka attur (*Pogostemon patchouli*).

4052. [3261B] Kurna ka attur (*Phœnix dactylifera*).

4053. [3262B] Tore ka attur (*Jasminum grandiflorum*).

4054. [3263B] Bookool ka attur (*Mimusops elengi*).

4055. [3255B] Sohag ka attur.

4056. [10085] Mattagussa oil.

ATTURS, &c.,

From Poona, Bombay, BOMBAY GOVERNMENT.

4057. [2890–1] Attar of Champa (*Michelia champaca*).

4058. [2] Attar of Patch (*Pogostemon patchouli*).

4059. [3] Attar of Kewda (*Pandanus odoratissimus*).

4060. [4] Attar of Goolab (*Rosa damascena*).

4061. [5] Essence of Chumbellee (*Jasminum grandiflorum*).

4062. [6] Attar of Chundun.

4063. [7] Essence of Mogra.

4064. [8] Attar of Mussala.

4065. [9] Essence of Motia (*Jasminum sambac*).

4066. [10] Attar of Downa (*Artemisia indica*).

4067. [11] Attar of Buckoola (*Mimusops elengi*).

4068. [13] Essence of Ood.

4069. [14] Essence of Dalchenee.

4070. [15] Essence of Lorung.

4071. [16] Essence of Joyphul.

4072. [17] Essence of Joyputtree.

4073. [18] Essence of Elldorah.

NATIONAL ARCHIVES OF INDIA

The following, also from Poona, are in the form of ointments for anointing the person :—

4074. [19] Kessur ke golee.

4075. [20] Limbolee arguja.

4076. [21] Arguja.

4077. [22] Kewda ka arguja.

4078. [23] Keshri arguja.

4079. [24] Kustori ka arguja.

4080. [25] Arguja.

4081. [26] Patch ka arguja.

4082. [27] Keshri mussalaka arguja.

4083. [28] Ootna.

4084. [29] Badam ka ootna.

4085. [2891] Kathgolie, Poona.

Small pills to be chewed with beera.

4086–7–8. [5720–1–2] Samples of rose-water (*Rosa damascena*). H.H. the MAHARAJAH of ULWAR.

4089–90–1. [5723–4–5] Keora-water (*Pandanus odoratissimus*). H.H. the MAHARAJAH of ULWAR.

4091A. [7843] Keora-water (*do.*). H. H. the RAJAH of JEYPORE.

4092. [10086] Mataghhussa (a kind of *Pot pourri*), Calcutta. KANNY LOL DEY.

4093. [1913] Putcha pat (*Marrubium odoratissimum*).

4094. [7050] Patchouli (*Pogostemon patchouli*), Ayer Rajah Estate, Penang.

4095. [5119] Khus khus (*Anatherum muricatum*), Lucknow.

4096. [5120] Khus khus, Calcutta.

4097. [5118] Khus khus, Cuttack.

Khus khus, the root fibres of the *Anatherum muricatum*, which is the common '*bena*' or thatching-grass that covers large tracts of waste land in the province of Cuttack. Known generally by its aromatic perfume, it is also locally used as a medicinal, for much the same purposes as 'Sarsaparilla.'*

4098. [10046] Kharee (scented grass), Jhung District.

4099. [7024] Putchuk (*Costus arabicus*), Bombay.

* Local Committee, *Cuttack.*

4100. [942] Screw-pine flowers (*Pandanus odoratissimus*).

4101–2–3. [1784–85–1870] Ustakhudas (*Lavandula stœchas*), Punjab.

4104. [1809] Indian Nard (*Nardostachys Jatamansi*), Punjab.

4105. [7043] Goolab ke phul (*Rosa damascena*), Bombay.

4106. [1877] Nagkesur flowers (*Mesua ferrea*), Punjab.

4107. [6486] Southernwood (*Artemisia indica*), Calcutta. KANNY LOLL DEY.

4108. [78*] Sweet Fennel-seed oil (*Pimpinella anisum*), Madras.

4109. [75*] Oil of Fenugrec (*Trigonella fœnum græcum*), Do.

4110. [73*] Pepper oil (*Piper nigrum*), Do.

4111. [71*] Bishop's weed (*Anethum sowa*), Do.

4112. [69*] Cuscus (*Andropogon muricatum*), Do.

The following miscellaneous collection of articles of perfumery, &c. is from the INDIA MUSEUM :—

4113. [8*] Three cakes of scented paste or ointment from Malwa.

4114. [9*] Arguza, Beejapoor.

Pigment for the body. 1R. 14A. per tola.

PERFUMES FROM SATTARA.

4115. [10*] Indooree Booka.

Scented powder used in offerings.

4116. [11*] Vijarpoorchey Till Chumalee.

Scented sesamum seed. 2A.

4117. [12*] Ashtagundh Tupkeree.

Snuff-coloured perfume of eight ingredients. 5R. per tola.

4118. [13*] Ashtagundh Keshree.

Saffron-coloured perfume of eight ingredients. 2R. 10A.

4119. [14*] Beejapoor Booka.

Scented powder used in offerings. 6A.

4120. [19*] Clarified Gum Benjamin (*Styrax benzoin*), Madras.

NATIONAL ARCHIVES OF INDIA

4121. [20*] Cinnamon sugar-candy.

ESSENTIAL OILS FROM SATTARA.

4122. [22*] Scented sticks.

For fumigating apartments.

4123–4–5. [23*–24*–25*] Scented sticks.

4126. [284*] Oil of Keora (*Pandanus odoratissimus*).

4127. [285*] Oil of Paudhree Matee (or white earth).

4128. [286*] Oil of Bukolee (*Mimusops elengi*).

4129. [287*] Oil of Murra or hyssop.

4130. [288*] Oil of Duvna (*Artemisia indica*).

4131. [289*] Oil of Goolab or rose (*Rosa damascena*).

4132. [290*] Oil of Son Chapa (*Michelia Champaca*).

4133. [292*] Oil of Gaee (*Jasminum* sp.).

4134. [293*] Attar of Kheora (*Pandanus odoratissimus*).

4135. [294*] Attar of Josee.

4136. [295*] Volatile attar of *Lavandula carnosa*.

4137. [304*] Attar Keora (*Pandanus odoratissimus*), Calcutta.

4138. [305*] Attar 'Santal' (*Santalum album*), Calcutta.

4139. [306*] Nag Kesur (*Mesua ferrea*), Calcutta.

4140. [307*] Attar of Ughur, Calcutta.

4141. [308*] Attar (Bela) (*Jasminum sambac*), Calcutta.

ATTARS FROM MADRAS.

4142. [309*] Attar of Jasmine (single), (*do.*)

4143–4. [310*–11*] Attar of Jasmine (double).

4145. [312*] Attar of Jasmine (single).

4146–7. [313*–14*] Attar of Patchouli (*Pogostemon Patchouli*).

4148–9–50. [315*–16*–17*] Attar of Rose (*Rosa centifolia*).

4151–2. [318*–19*] Attar of mixed roots and flowers.

4153–4. [320*–21*] Attar of Lemon Grass (*Andropogon schœnanthus*).

4155–6–7. [322*–3*–4*] Attar of Fragrant Percularia (*Percularia odoratissima*).

4158. [326] Attar of mixed flowers.

4159–60. [327*–8*] Attar of Aloes wood.

4161. [329*] Attar of Southernwood (*Artemisia indica*).

4162. [330*] Attar of Fragrant screw pine (*Pandanus odoratissimus*).

4163. [331*] Attar of Pointed-leaved Mimusops (*Mimusops elengi*).

4164. [333*] Attar of *Pandanus odoratissimus*.

4165. [334*] Attar Gulzar.

4166. [335*] Attar *Andropogon muricatus*.

4167. [336*] Attar *Jasminum auriculatum*.

4168. [337*] Attar Nuttee.

4169. [338*] Attar Muhak Pari.

4170–1. [339*–40*] Attar *Jasminum grandiflorum*.

4172. [344*] Grass Oil (*Andropogon Iwarancusa*), Calcutta.

ATTARS FROM BENARES.

4173. [345*] Attar of Moteya (*Jasminum hirsutum*).

4174. [346*] Attar of Sohag.

4175. [347*] Attar of Chumpa (*Michelia Champaga*).

4176. [348*] Attar of Khus-khus (*Andropogon muricatus*).

NATIONAL ARCHIVES OF INDIA

4177. [349*] Attar Uggu (Aloes wood).

4178. [350*] Attar Wuroos.

4179. [351*] Attar Sogundra.

4180. [352*] Oil of Beyla (*Jasminum sambac*).

4181. [353*] Oil of Beyla (*do.*)

4182. [354*] Attar of Goolzur.

4183. [355*] Attar of Raehrookh.

4184. [356*] Sireh oil.

Note.—In Classes III. and IV. MR. M. C. COOKE has been enabled to render valuable assistance.

CLASS V.—RAILWAY PLANT, INCLUDING LOCOMOTIVE ENGINES AND CARRIAGES.

I.—RAILWAY MACHINERY AND PERMANENT WAY.

4185. [10200] Cast-iron railway chair, Kumaon.

Manufactured by the Kumaon Iron Works.

4186. [10199] Three specimens of cast-iron tramplates, Kumaon.

Invented by MR. HARDY WELLS, chief engineer, Rohilcund Tramway.

4187. [2425] Iron rails, Kumaon.

CLASS VI.—CARRIAGES NOT CONNECTED WITH RAIL OR TRAMROADS.

Of carts and wagons of all kinds, except those distinctly agricultural, there are but two.

4188. [5815] Sumbulpore cart (model), drawn by bullocks, Cuttack.

4189. [3326] Burmese cart (model), Rangoon. Messrs. HALLIDAY, FOX & Co.

CLASS VII.—MANUFACTURING MACHINES AND TOOLS.

Section A.—MACHINERY EMPLOYED IN SPINNING AND WEAVING, OR IN MAKING FELT AND LAID FABRICS.

For the Manufacture of all Spun, Woven, Felted, or Laid Fabrics.

4190. [5813] Cotton spinning machine, Cuttack.

4191. [5811] Weaving machine, Cuttack.

4192. [5819] Cotton-carder's bow, Cuttack.

4193. [561] 'Pingara,' or cotton beater, Dharwar. C. W. ANDERSON, Esq.

After being separated from the seed, it is beaten in this manner to open out the fibre and fit it for spinning.

NATIONAL ARCHIVES OF INDIA

4194. [544] 'Rahat,' or spinning-wheel ($\frac{1}{5}$ real size). C. W. ANDERSON, Esq.

4195. [545] 'Tanwul,' or rack, ($\frac{1}{5}$ real size), on which the thread is wound to form into hanks for sale. C. W. ANDERSON, Esq.

4196. [2744] Silk spinning wheel, Chittledroog, Mysore.

4197. [8096] Loom, Rangoon. Messrs. HALLIDAY, FOX & Co.

4198. [5915] Instrument used in spinning, Durrung, Assam. LIEUT. PHAIRE.

4199. [5918] Loom, Assam. Do.

4200. [5919] Loom, Assam. Do.

4201. [5811] Weaving apparatus, Cuttack.

4202. [1649] Shawl manufacturer's loom, with goat's wool, &c., Umritsur.

4202A. [3830] Carpet loom, Jhansee.

4202B. [3813] Tools used in making carpets, Jhansee.

Although not strictly coming under the above heading in the 'Jury Directory,' the cotton-cleaning gins or churkas are inserted here.

4203. [5820] Churka, Patna.

4204. [3827] Cotton gin, Jhansee.

4205. [2831] Cotton gin, Behar.

4206. [2681] Cotton gin, Chittledroog, Mysore.

4207. [5818] Churka, Ulwa. H.H. the RAJAH of ULWAR.

4208. [2873] Cotton gin, Cuttack.

Used in the Sumbulpore district only.

4209. [5812] Cotton gin, Cuttack.

4210. [562] The foot roller, for cleaning cotton, Dharwar.

The iron is worked with two feet on a stone by a woman sitting, or rather balancing herself on a low stool. The seeds are rolled out in front, and the cotton drawn away as fast as it is freed from the seed, and piled up behind under the stool. A small model of a woman cleaning cotton with this instrument is sent.*

4211. [537] 'Ratee,' or roller ($\frac{1}{2}$ the real size) is sometimes used for separating the seed from the cotton, Dharwar.

Section B.—MACHINERY USED IN THE MANUFACTURE OF VEGETABLE SUBSTANCES.

4212. [5822] Oil mill, Shahabad.

4213. [5816] Oil mill, Cuttack.

4214. [5821] Oil mill, Patna.

4215. [8097] Kailhoo or oil machine.

4216. [2722] Oil mill, Bangalore, Mysore.

4217. [3330] Burmese pestle, Rangoon. Messrs. HALLIDAY, FOX & Co.

4218–19. [3323–4] Husking machines, Rangoon. Messrs. HALLIDAY, FOX & Co.

4220. [5809] Model of rice-cleaning machine, Burmah.

4221. [5810] Model of rice-husking machine, Burmah.

4222. [3061] Model of mill for hulling and dressing rice, Rangoon. ORIENTAL RICE COMPANY.

The following remarks accompany the above:—

The mill was invented by THOMAS SUTHERLAND, merchant and mill-owner, Melbourne, Australia, at which place the first mill was erected, and is now working.

A great many merchants having tested the invention at once formed themselves into a company, named as above, and sent the inventor and patentee to India to erect a mill. Rangoon was selected. MR. SUTHERLAND arrived there on the 13th of November 1860; and in a little over three months had these extensive and substantial buildings finished, the walls being all brick, and covered with corrugated galvanised iron. The main building is 176 ft. long, 40 ft. wide, and 35 ft. high, three stories. The engine-room is 70 ft. long, 20 ft. wide, and 18 ft. high; the boiler-house, 50 by 60, and 18 ft. high; work-shop, 20 by 20; the smithy and moulding-shop, 35 by 16; European's cottage, 40 by 24; office, 30 by 20—two stories high.

The mill contains, as shown by the model, 40 run of stones, 20 being conical and 20 circular; besides these are fifty other machines, viz. polishing-machines, elevators, fans, screens, &c.

These are driven by two large engines, each engine driving a half of the mill; but one engine is capable of driving all, if necessary, in case of a break-down. A clutch is placed on the main shaft, by which it is joined or separated at pleasure, and one engine then drives the entire mill. The steam is supplied by four large boilers.

The mill has now been several months at work, and has surpassed the best expectations of the owners, both as to the quantity and quality of the rice produced. Three hundred and fifty tons can be turned out in the twenty-four hours, with a mere trifle as to manual labour, as nearly all the work is done by machinery. Ships load at the company's wharf, in front of the mill—the sacks of rice being sent from the mill to the ship's side in trucks running on a tramway. This alone saves immense labour. Such is the success of the mill that several others are now ordered for this and other ports.

The value of rice produced by the Company's mills is already valued at 1s. a cwt. over native-cleaned rice; but it is believed, when the trade once know the quality, it will fetch 2s. a cwt. over any hand-cleaned rice.

Messrs. JAMES WYLLIE & Co., of No. 2, King William Street, London, have full power from the patentee to license parties to erect and work this patent. They

* C. W. ANDERSON, Esq.

NATIONAL ARCHIVES OF INDIA

further also possess working plans, &c., and will give all necessary information to those who may desire to erect such mills in Europe or elsewhere.

4223. [2721] Sugar mill, Bangalore, Mysore.

4224. [5814] Sugar-cane mill, Cuttack.

4225. [538] 'Gana,' Dharwar. W. C. ANDERSON, Esq.

Mill for extracting the juice of the sugar-cane ($\frac{1}{10}$ real size), worked by two bullocks, or, by putting an extra bearer, by four bullocks.

CLASS VIII.—MACHINERY IN GENERAL.

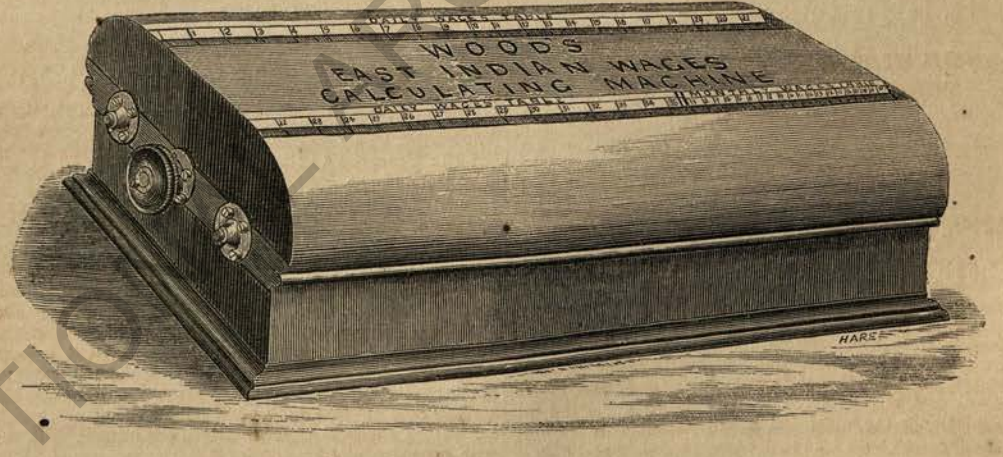
Under the division of this class devoted to 'Hydraulic Machines, Pile Drivers, &c.,' a particularly interesting model of a pile-driving machine, invented by DR. FORBES, is exhibited, along with a photograph of a bridge constructed in accordance with the arrangement shown in the model. The object of the machine is the construction of substantial wooden bridges at a small cost, in 'black soil' districts, where building materials are not procurable.

4226. [269] Pile-driving machine, Dharwar. DR. FORBES.

4227. [9420] Photograph of bridge constructed by DR. FORBES.

Under the head of 'Measuring and Registering Machines for Commercial, and not for Philosophical Purposes,' is placed Mr. Wood's ingenious and useful 'East Indian Wages Calculating Machine.'

4228. [8099] Wages calculating machine for the East Indies. C. WOOD, Esq.



The inventor having long experienced the labour and liability to error in making up the weekly wages account, in works where a number of hands are employed, recommends the above machine to the notice of railway contractors, builders, managers of iron works, coffee plantations, cutcherries, &c. as a valuable adjunct to their accountant's offices.

The CALCULATING MACHINE is arranged upon a plan so simple, that persons of the most ordinary capacity may be made familiar with its use in a few minutes, and the inventor believes that it will be found to repay the purchaser its original cost in the space of a few weeks, viz. by reducing the number of clerks required under the present system of calculating wages.

This machine will calculate wages in rupees, annas, and pice, at rates varying from 6 pice per day to 12 annas per day, and from $\frac{1}{4}$ day to 35 days; and also for monthly wages varying from 1 rupee per month up to 20 rupees per month, or for any number of days during that time.

Directions for Use.—Required the amount of wages due to a workman for $18\frac{3}{4}$ days, at the rate of 7 annas and 9 pice per day:—

Turn the rollers round until you find 7/9 on the first row of large figures (on the left-hand side), then find $18\frac{3}{4}$ in the fixed *Index* above the opening under weekly wages table, immediately under which number you will see 9/1/3 upon the roller, being the amount, 9 rupees, 1 anna, and 3 pice.

NATIONAL ARCHIVES OF INDIA

Again, let a man's wages be 9 rupees *per month*, required the amount due to him for 7 days' work:—

Look for the division marked monthly wages table. Turn the rollers round until you find 7, in the last row of large figures on the left-hand side (of this division), then find 9 in the fixed *Index* above the opening, and immediately under which number you will see 2/1/3 upon the roller—2 rupees, 1 anna, 7 pice.

Upon the roller of each machine will be found further instructions. Price in England, packed ready for India, 120 rupees.

These machines may be obtained of Messrs. RANSOMES & SIMS, Ipswich, or of the inventor, Mr. CHARLES WOOD, Bramford, near Ipswich.

CLASS IX.—AGRICULTURAL AND HORTICULTURAL MACHINES AND IMPLEMENTS.

Although the ordinary agricultural implements, viz. those used in simple tillage, are often of the very rudest description, and although a wide field is opened for improvement, it must nevertheless be borne in mind that the soils of India are of a very different character to those of this country, and do not require either the same amount or kind of mechanical treatment in order to produce the requisite effect. The description of the implements used in Dharwar agriculture given with the models forwarded by Mr. ANDERSON, will be read with interest.

AGRICULTURAL IMPLEMENTS USED IN THE DHARWAR COLLECTORATE.

Collected by C. W. ANDERSON, Esq.

4229. [536] Large plough ($\frac{2}{5}$ the real size).

On ground being brought into cultivation for the first time, it is ploughed with this, lengthways and crossways. If the land is heavy, eight bullocks are used; if light, four are sufficient. It is used in cotton and also in grain cultivation.

4230. [533] Small plough ($\frac{1}{4}$ real size).

Used in black soil at intervals of from six to ten years, and worked with two or four bullocks according to the depth of ploughing and stiffness of the soil. Used in cotton and also in grain cultivation; in red soils it is used every year.

4231. [528] The 'Kooloo' ($\frac{1}{3}$ the real size).

Used with two bullocks after ploughing for further breaking up the soil, and also used without previous ploughing in the years when the black cotton soil is not ploughed. After the seed, whether cotton or grain, is sown with the drill, the iron and wooden supports are removed from this instrument, and the soil smoothed over the seed with the upper wood alone, drawn by two bullocks, and kept by the foot of the driver.

4232. [531] The 'Tephun' or drill ($\frac{2}{5}$ the real size).

Used for sowing cotton. Drawn by two bullocks; the two seed tubes are fed by a woman each.

4233. [543] The 'Koolpee' ($\frac{1}{4}$ the real size).

Drawn by two bullocks between the rows of cotton, to eradicate weeds by this means: also the soil about the roots of the cotton plants is loosened and piled up—a rough substitute for hoeing.

4234. [532] Koorie, or drill ($\frac{1}{4}$ real size).

Used in sowing grain. Worked with two bullocks, which one man drives, and this man feeds the receptacle for the seed communicating to the four tubes, and a third man works the extra tubes at the side, with which another description of seed or oil seed is very commonly sown in every fifth row. A model of this implement in work is sent.

4235. [530] Kolpa ($\frac{1}{3}$ real size).

Drawn by two bullocks, used for rooting up the weeds between the rows of grain; the row of grain is left untouched in the interval in the middle; the earth is also by the same operation loosened around the roots of the grain. Two of these are frequently worked together with one pair of bullocks and two men.

4236. [555] 'Eela' or reaping-hook ($\frac{1}{6}$ real size).

4237. [556] Pickaxe ($\frac{1}{8}$ real size), two descriptions, and axe ($\frac{1}{8}$ real size).

4238. [535] 'Hullee Bundee' ($\frac{1}{10}$ real size).

Not seen much of large size in the Deccan, but very common in the S. M. C., drawn by eight bullocks. The tires are of much heavier iron than appears from the model. They are commonly six inches deep. A pair of wheels costs up to 120 rupees; they last 50 or even 100 years, and are handed down as heirlooms in families.

NATIONAL ARCHIVES OF INDIA

RICE CULTIVATION.

4239. [550] 'Naugur' plough ($\frac{1}{4}$ real size).

Used for rice cultivation. Worked with two bullocks. Rice land is ploughed with this two or three times every year.

4240. [549] 'Don,' or clod-crusher ($\frac{1}{10}$ real size).

Drawn with two bullocks: the driver stands on the implement when working it.

4241. [528] 'Kooloo' ($\frac{1}{5}$ real size).

Used after the clod-crusher for levelling the ground. With the scarifier removed, it is used for covering in the seed after it is drilled in.

4242. [534] Manure-cart ($\frac{1}{14}$ real size).

Worked with two bullocks.

4243. [534] A 'Koree,' or drill used in rice cultivation ($\frac{1}{6}$ real size).

Is similar to the drill used for the other grain, except that there are six tubes, and no extra tube for other grain is used, rice being sown alone: worked by two bullocks.

4244. [542] 'Koolpa,' or weed-extractor ($\frac{1}{4}$ real size).

The loose handle is used to keep it true in its line. Worked by two bullocks.

4245. [559] 'Khora,' or hoe ($\frac{1}{5}$ real size).

4246. [551] 'Khorpee,' or weeder ($\frac{1}{4}$ real size).

For cleaning away any weeds which may have escaped the khoolpa or weeder drawn by bullocks.

4247. [558] 'Eela,' or rice reaping-hook ($\frac{1}{5}$ real size).

4248. [560] 'Akree,' or hook, for collecting the grain in straw together ($\frac{1}{8}$ real size).

4249. [547] 'Phowra' ($\frac{1}{8}$ real size).

May be called a solid rake for heaping together grain.

4250. [541] 'Dantala,' or rake ($\frac{1}{3}$ real size).

4251. [548] 'Fewuttee,' or stool ($\frac{1}{10}$ real size).

For standing on when winnowing. It is six or seven feet high.

4252. [540] 'Bheerut,' or mill ($\frac{1}{8}$ real size).

Used for removing the husk from rice.

SUGAR-CANE CULTIVATION.

4253. [557] 'Ghoorda' ($\frac{1}{6}$ real size).

Used for raising water three or four feet; worked by men holding the ropes at the corners and surging it backward and forwards.

MODELS

From BANGALORE, MYSORE.

4254. [2715] Plough 'Négalu.'

4255. [2716] Harrow 'Halavay.'

4256. [2717] Sowing-machine 'Koorigay.'

4257. [2718] Weeding-machine, 'Koontey.'

4258. [2719] Levelling-machine 'Halabey.'

4259. [2720] Harrow 'Hegguntey Rumtee.'

4260. [3288] Common plough, Jhansee.*

4261. [5817] Plough, Cuttack.

4262. [3829] Plough (*Bukhur*), Jhansee.*

4262A. [5268] Iron kodali or mattock, Assam. CAPT. E. ROWLATT.

4262B. [3189–90] Agricultural implements, Darjeeling. DR. A. CAMPBELL.

* Forwarded by the Central Committee, *Allahabad.*

CLASS X.—CIVIL ENGINEERING, ARCHITECTURAL AND BUILDING CONTRIVANCES.

Section A. — CIVIL ENGINEERING AND BUILDING.

Under the fifth division of this section MR. ELTON TEMPLEMORE exhibits a model of a diving-bell and apparatus in successful application in connection with the operations now being carried on in the Madras roads.

4263. [375] Model of diving-bell and apparatus, Madras. ELTON TEMPLEMORE, Esq.

NATIONAL ARCHIVES OF INDIA

Section C.—OBJECTS OF ARCHITECTURAL BEAUTY OR DECORATION.

iv. — *Manufactures in Stone, Alabaster, &c. for useful and ornamental purposes.*

FROM PATNA.

4264. [5596] Cup and cover, gilt edges. GOVERNMENT of INDIA.

4265. [5219] Stone dish.

4266. [5799] Small stone goblet.

FROM GYAH, PER GOVERNMENT OF INDIA.

4267. [5587] Brahmin bull.

4268. [5588] Brahmin cow.

4269. [5589] Buffalo.

4270. [5590] Buffalo cow.

4271. [5584] Rhinoceros.

4272. [5586] Camel.

4273. [5591] Figure of Runjeet Sing.

4274. [5583] Bear.

4275. [5592] Bull, Patna.

4276. [5593] Stag, Patna.

4277. [5594] Religious mendicant, Patna.

4278. [5595] A dog, Patna.

FROM CUTTACK.

4279. [5570] Stone cup.

4280. [5571] Pair drinking cups.

4281. [5220] Turned stone plate.

FROM AGRA.

4282. [1207] Square marble chessboard.

4283. [1333] Octagonal marble chessboard.

4284-5. [1506-1344] Marble inkstands.

4286. [1530] Tray.

4287-90. [1533-6] Four paper weights.

The following articles, Nos. 4291 to 4305, are carvings in soapstone:—

4291-2. [3815-17] Inkstands.

4293-4. [3818-19] Large trays.

4295. [3821] Square tray.

4296-7. [3822-3] Small trays.

4298-4300. [3824-6] Small plates.

4301. [3816] Octagonal box.

4302. [1638] Model of Hyderabad Temple.

4303-5. [1633-5] Vessels in soapstone, Jhansee. KHEREE RAMBUX.

FROM ULWAR, CONTRIBUTED BY H.H. THE MAHARAJAH.

4306. [5874] Ruler of pink tinted marble.

4307-8. [5877-8] Paper weights, pink marble.

4309-10. [5879-80] Paper weights, white marble.

4311. [5881] Cup, pink marble.

4312. [5882] Spoon, pink marble.

FROM JEYPORE, CONTRIBUTED BY H.H. THE RAJAH.

4313. [4980] Plate, white marble.

4314. [9380] Elephants fighting.

4315. [9381] Cow and calf.

FROM BELLARY, MADRAS. GOVERNMENT OF MADRAS.

4316. [3740] Flower vases.

4317. [3741] Two paper weights.

4318. [3742] Inkstand.

4319. [3743] Water jug.

4320-1. [3744-5] Butter-pot and stand.

FROM NORTH ARCOT, MADRAS.

4322. [10624] Goglet. THATHNA LINGACHARRI, manufacturer.

4323-4. [10625-6] Vases.

4325. [5888] Model of temple in Burmese alabaster, Pegu. COL. PHAYRE.

4325A. [4832] Burmese idol, Rangoon. Messrs. HALLIDAY, FOX & Co.

NATIONAL ARCHIVES OF INDIA

CLASS XI.—MILITARY ENGINEERING.

Section C.—ARMS, ETC.

Division III.—SMALL ARMS.

The arms exhibited on the present occasion are not nearly equal in number to those shown in the Exhibitions of 1851 and 1855; nevertheless, some of them are exceedingly choice, and of exquisite workmanship.

4326. [5764] Rifle, Enfield pattern, Nepaul. H. H. SIR JUNG BAHADOOR, K.C.B.

4327. [5765] Musket and bayonet.

4328. [5763] Breech-loading carbine.

4329. [5766] Revolver, six-barrelled.

Manufactured in SIR JUNG BAHADOOR'S Arsenal at Nepaul.

4330. [10249] Matchlock flint, with apparatus, &c., Lahore. H.H. the NAWAB of BHAWULPORE.

4331. [5761] Matchlock, Ulwar. H.H. the MAHARAJAH of ULWAR.

4332. [5759] Fowling-piece, enclosing a second gun.

Exhibited as an excellent specimen of native ingenuity. It was made by SETARAM, head-smith of the RAJAH of ULWAR.

DIRECTIONS FOR TAKING OUT THE INNER GUN.

a. Sight-screw to be taken off. This will separate the length of the outer gun and discover the smaller one inside.

The box at the end of the butt of the latter contains:—*b.* Screw, to be fixed on the left side of the outer barrel after the movable breech has been fixed in.—*c.* Movable breech, to be fixed to outer barrel.—*d.* Breech screwer.—*e.* Small gun.—*f.* The knife securing gun-caps at its handle pushes down the trigger through the recess, and the cap is fixed on the down-pointed nipple by the knife's handle.

4333. [788] Rifle, twisted and engraved barrel, Khyrpoor. H.H. MEER ALI MORAD.

4334. [802] Matchlock, Arabian pattern, with accoutrements, Kutch. H. H. the RAO of KUTCH.

4335. [803] Matchlock and accoutrements, Do. Do.

4336. [5762] Matchlock, with punch and powder-horn, Cuttack. GOVERNMENT of INDIA.

Made at Bedhanpore, in the Hill State of Dhenkanal. Time has not allowed of its being finished in the best style, but it is a fair piece of workmanship for this country, and the maker is noted among native Shekarees (hunters), *his guns carrying a small charge, yet shooting very hard and well.* The match is made of the Koombhee (*Careya arborea*). Price of this piece 30R. or 3*l.**

SWORDS, DAGGERS, ETC.

FROM ULWAR. H. H. THE MAHARAJAH.

4337. [5771] Dagger (Kuttar), gold-mounted.

4338. [5768] Sword (Tulwar), blade of two kinds of steel.

4339. [5769] Sword, small (Zuffur Tukia).

4340. [5770] Knife (Choora).

FROM PUTTIALA. H.H. THE MAHARAJAH.

4341. [971] Dagger, ivory handle, gold-mounted.

4342. [972] Dagger, silver handle, ivory scabbard.

4343–4. [973–4] Swords, gold-mounted.

4345. [5776] Dagger, pearl handle, Lahore. H.H. the NAWAB of BHAWULPORE.

4346. [5777] Dagger, ivory handle, green velvet scabbard, Lahore. CAPT. HARRISON, *H.M. 79th Highlanders.*

CONTRIBUTED BY JOHN MARTIN, ESQ., CALCUTTA.

4347. [8175] Sword and scabbard, Calcutta.

4348. [3051] Dagger, fine steel, gold-inlaid handle, green velvet scabbard, Lucknow.

---

* Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

4349. [2186] Sword, presented by Calcutta Volunteers to MAJOR DAVIES, Calcutta. Messrs. ALLEN & HAYES, *Jewellers, Calcutta.*

Manufactured by native workmen.

4350. [3052] Dagger, Damascene blade, massive ivory handle, in a gold-mounted velvet scabbard, Calcutta. Messrs. ALLEN & HAYES, *Jewellers, Calcutta.*

4351–2. [4252–3] Triplicate Daggers, Rampore. H.H. the NAWAB of RAMPORE.

These curious weapons are so constructed that the smallest knife is sheathed in the second, and the second in the handle and blade of the largest one.

4353. [5772] Hunting-knife, with scabbard, Cuttack. GOVERNMENT of INDIA.

Price 10*s*. The native blacksmiths of Cuttack turn out excellent specimens of cutlery.

4354. [5778] War-knife, Peshawur. MAHOMED ZUMA.

4355–6. [6495–6] Daggers or Churas, Bokhara, Peshawur. H.H. NAWAB KHARROOLA KHAN.

FROM DARJEELING. DR. A. CAMPBELL.

4357–8. [4254–5] Knives (Kookee), silver-mounted.

4359. [4256] Knife, plain.

4360. [4257] Knife (Bootanese).

4361. [4258] Dagger-shaped instrument, wooden, found in altars, in Lamooneers.

4362. [4268] Sword (Bootanese), in crimson scabbard.

DAGGERS (*richly mounted*).

Exhibited by Col. GUTHRIE, Bengal Engineers.

4363. [1381] Dagger, jade green buffalo-head handle, jade scabbard mount.

4364. [1382] Dagger, jade ram's-head handle, leather scabbard.

4365. [1383] Dagger, white jade handle, jewelled.

4366. [1384] Dagger, do., gold-inlaid.

4367. [1385] Dagger, plain jade handle, two jade mountings.

4368. [1386] Dagger, rock-crystal leopard's head handle, topaz eyes, coral tongue, plain velvet scabbard.

4369. [1387] Dagger, rock-crystal handle, blue velvet scabbard.

4370. [1388] Dagger, do., red velvet scabbard.

FROM KHYRPOOR, SCINDE. H.H. MEER ALI MORAD.

4371. [789] Dagger, with horn handle, silver-mounted scabbard.

4372. [786] Sword, gold-mounted.

FROM KUTCH. CONTRIBUTED BY H.H. THE RAO.

4373. [792] Sword or Talwa, inlaid with gold and silver.

4374–5. [795–6] Daggers, inlaid with gold and silver.

4376. [799] Dagger or Bichwa, inlaid.

4377. [800] Dagger, with red glass handle.

4378. [801] Dagger, inlaid with gold.

4379. [1076] Knife, ivory handle and scabbard, Hyderabad. GOVERNMENT of BOMBAY.

4380. [1077] Knife, wooden scabbard, Do. Do.

4381. [4719] Hunting-knife or Shikaree, with accoutrements, Sawunt Warree.

4382. [452] Two Malay knives, Malabar. DR. M'PHERSON, *Madras.*

4383. [10590] Two Malay knives. GOVERNMENT of MADRAS.

4384. [6360] Six Krisses, viz. 'Panjang,' 'Sepucal,' 'Chinankas,' 'Toomboo Ladah,' 'Bladohe,' 'Badeh,' Singapore. HON. COL. CAVANAGH.

These krisses are those commonly in use, and have their names according to their uses or qualities, as *Panjang*, long—*Sepucal*, straight, &c.

4385. [9422] Two metal knives, small.

4386. [9423] Two long gauntlet swords. INDIA MUSEUM.

NATIONAL ARCHIVES OF INDIA

BATTLE-AXES, SPEARS, ARROWS, &c.

4387. [5779] Weapon, Bysakhee, Khyrabad, Oude. C. LINDSAY, Esq., *Deputy Commissioner of Hurdin.*

A powerful weapon of offence and defence; also used as a rest for the arm by fakeers. An article of very great antiquity.

4388. [5767] Sword, or 'Korah,' Nepaulese. H. H. SIR JUNG BAHADOOR, K.C.B.

Silver handle and gold mountings, Nepaul.

4389. [10235] Bow and arrows, Tilhur, Shahjehanpore. GOVERNMENT of INDIA.

4390. [5773-5] Battle-axes, Cuttack. GOVERNMENT of INDIA.

4391–2. [7857] Two spears, highly ornamented, Jhend.

4393. [8172] Shield of basket-work, Darjeeling. DR. CAMPBELL.

4394. [7816] Horn priming powder-flask, Jeypore. H.H. the RAJAH.

4395. [5660] Shield or Dhal, Ulwar. H.H. the MAHARAJAH.

FROM KUTCH. H.H. THE RAO.

4396. [646] Shield of rhinoceros skin.

4397. [651] Battle-axe or Koolung.

Inlaid with gold, &c.

4398. [797] Battle-axe or Tubbur.

Inlaid with gold, &c.

4399. [798] Battle-axe.

Inlaid with gold, &c.

4400. [976] Battle-axe or Da.

Inlaid with gold, &c.

4401. [794] Lance.

Gold mounted (in two parts).

4402. [8174] Chain armour.

Complete suit of five pieces.

4403. [787] Shield, gold-mounted, Khyrpoor. H.H. MEER ALI MORAD.

4404. [8173] Chain armour, comprising coat of mail, head-piece, legging, and two gauntlet-gloves, Khyrpoor. H.H. MEER ALI MOORAD.

4405. [920] Steel bow and twenty-six arrows, Rewa Kanta. DR. NICHOLSON, *Bombay Army.*

4406. [451] Battle-axe, British Burmah. DR. MCPHERSON, *Madras.*

4407. [466] Quiver of Upas-poisoned arrows for the simpoon or blow-pipe gun, with spare Upas poison in case attached, Do. Do.

4408. [6343] Six spears, with royal gold ferules. H.H. the RAJAH of TRINGANU.

These spears are borne as marks of royalty before the Rajah of Tringanu.

4409. [9424] Four shields on outside of arm's case. INDIA MUSEUM.

4410. [9425] Eight spears, various. INDIA MUSEUM.

4411-12. [2443-4] Two Hankas, or Elephant drivers' spears. KENNETH MCLEOD, Esq., *Grishinish, Isle of Skye.*

4413. [9426] Two very fine Mahout spears, of the best cut steel. E. W. WINGROVE, Esq., *Twickenham.*

CLASS XII.—NAVAL ARCHITECTURE AND SHIPS' TACKLE.

Sections A. and B.

The models of boats, &c. exhibited on the present occasion are but few in number. In order to form a correct notion of the forms employed, the India Museum, which contains the admirable collection of models belonging to this class exhibited in 1851, and again in Paris in 1855, must be referred to.

4414. [5806] Ferry-boat, Kishnagur.

MODELS OF BOATS

From RANGOON. Messrs. HALLIDAY, FOX & Co.

4415. [3315] Burmese pulling-boat.

NATIONAL ARCHIVES OF INDIA

4416. [3316] Burmese royal boat.

4417. [3317] Racing-boat.

4418-19. [3318-19] Cargo-boats.

4420. [3320] Long-boat.

4421. [3322] Dauk.

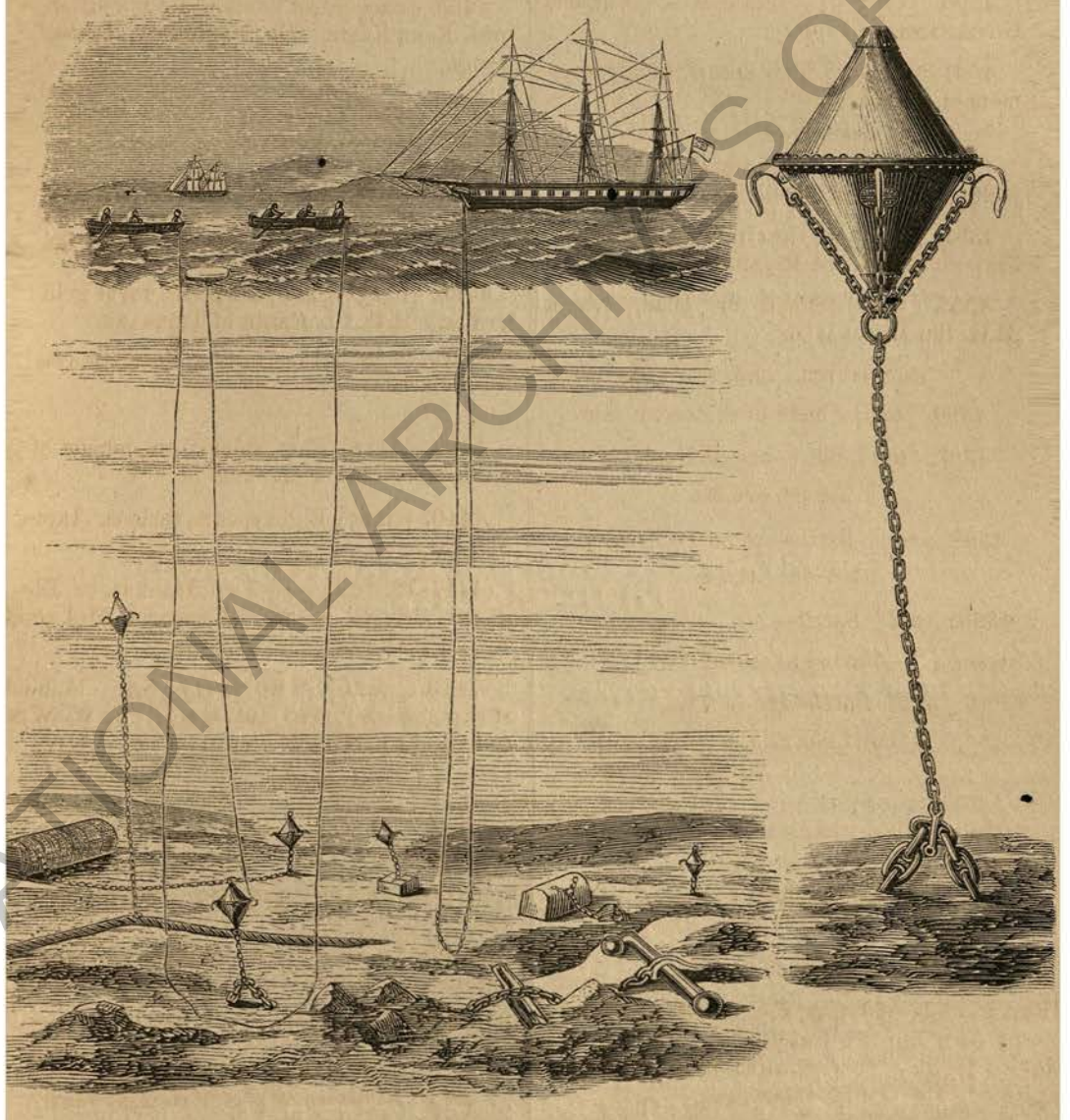
4422. [3325] Chinese junk.

Section C.—SHIPS' TACKLE, ETC.

Under this section is exhibited an interesting appliance, the invention of MR. ELTON TEMPLEMORE, of *Madras*, the object of which is to prevent the loss and facilitate the recovery of ships' moorings, and of submerged property in general.

4423. [7996] Submarine recovery buoys (patent). ELTON TEMPLEMORE, Esq.

4424. [7996] Tank, with buoys, models of boats, &c., showing application of the above.



TEMPLEMORE'S SUBMARINE RECOVERY BUOY.

NATIONAL ARCHIVES OF INDIA

This invention is stated to supersede the ordinary and doubtful security afforded by the present plan of buoying off ships' anchors and cables with a rope and surface buoy, when slipped at the anchorage ground; in which case the rope rots, or is broken, the buoy disappears, and, finally, the moorings are lost. The submarine buoy is for the purpose of being attached to property intended to be submerged; and whilst being chiefly applicable to ships' moorings, it may be used with advantage in all cases of submerged property, where the use of a buoy is necessary.

The following advantages are claimed for this invention:—

1st. It preserves ships' moorings from all risk of loss, at whatever description of anchorage ground.

2nd. The moorings are preserved submerged, in a position to be recovered after any lapse of time.

3rd. It affords additional facilities for ships to slip the cables, when it is known they are perfectly safe with the submarine recovery buoy attached.

4th. It is economical, as it saves the destruction of good rope, which must otherwise be required for the purpose of buoying the cables.

The submarine recovery buoy can be used in lieu of, or in addition to, the ordinary surface float, in all cases of property to be submerged. The inventor, being engaged by the Madras Government in recovering and raising ships' moorings from the Madras roads, has thus been enabled, from practical experience, to mature and submit a plan which will, for the future, prevent the loss of submerged property. The Madras roadstead, consisting as it does of a soft yielding sand, presents greater difficulties than are to be met with elsewhere; it allows articles to sink beneath the surface of the sand, by which they are *irrecoverably lost*, by being buried out of sight of the divers.

Patentee's agent, W. H. PAYN, Esq., Solicitor, Dover.

CLASS XIII.—PHILOSOPHICAL INSTRUMENTS.

4425. [5058] Troughton's improved land level and prismatic compass, Roorkee, N.W. Provinces. SIR PROBY CAUTLEY, K.C.B.

These excellent specimens of native workmanship are copies of instruments furnished by Messrs. TROUGHTON & SIMMS to the government workshops at Roorkee.

With the exception of the glass, which was procured from England, every part of these instruments was made by native workmen under the supervision of CAPTAIN AUGUSTINE ALLEN, the Superintendent, and Mr. MASON, the head of the Mathematical Instrument Department.

4426. [10050] Trisector, Agra. MOONSHEE SADA SUKH LALL.

Invented by the exhibitor.

CLASS XIV.—PHOTOGRAPHIC APPARATUS AND PHOTOGRAPHY.

Division II.—PHOTOGRAPHIC IMPRESSIONS EXHIBITED AS PHOTOGRAPHIC PICTURES.

The following photographs reached in time for exhibition. Since then a large collection, embracing portraits from almost the whole of the tribes and classes of India, taken under the auspices of the Indian Government, have been received, and are being arranged for distribution, along with copious descriptive notes of the various subjects delineated. Amongst these are included the tribes of Central India, photographed by the Rev. E. Godfrey and Lieut. Waterhouse; those of Bhurtpore by Messrs. Shepherd and Robinson; of Nagpore, Sikhim, and Bootan (specimens of which are exhibited) by Dr. Simpson; of the North-Western Provinces by Dr. Tressider; of Oude by Captain Fitzmaurice and Lieut. R. H. De Montmorency; of Hazara by T. T. Davies, Esq.; of Bombay and Sinde by Captain Houghton and Lieut. Tanner; and also of the tribes or inhabitants from the places undernoted which have come to hand unaccompanied with the artists' names, viz., from Moradabad, Benares, Allyguib, Goruckpore, Dehra Doon, and the Punjab; from the various collectorates of Madras; from Koorg, and, lastly, from Burmah and Penang.

A.—*Landscapes, Architectural Subjects, Natural Objects.*

4427. [8018] View of the town and temples of Hurdwar and head of Ganges Canal. SIR PROBY CAUTLEY, K.C.B.

NATIONAL ARCHIVES OF INDIA

4428. [8006] 1. Great Temple; 2. The Singh Durwajah, or Lion's Gate, of the Great Temple; 3. A curious tank to the east of the Great Temple, surrounded by seventy or eighty small temples; 4. Group of temples to the west of the Great Temple; 5. The Boital Temple; 6. The Mookteswar Temple, and idol's swing; 7. A grave near the Mookteswar Temple, and ruins; 8. The Temple Annuntoo Basa Davey, on the large tank Bindoo Sagur — evening; 9. The Temple Pursuram Iswar. Bobeneswar, Orissa.

In one frame. Photographed by CAPTAIN HENRY DIXON, 22nd M.N.I.

4429. [8007] 12. The Palace of Rajah Lalet Indra Kesari, or Ranee Goompah, rock-cut caves (right view); 13. The Palace of Rajah Lalat Indra Kesari, or Ranee Goompah, rock-cut caves (left view); 14. Do. Do. Do.; 16. The Ganesa Cave, cut in the rock, said to be the most ancient, and dating about 200 years B.C.; 17. The Hill of Khundaghirri, with modern Jain temple. 19. Group of rock-cut caves. Oodyaghirri, Orissa.—10. The Temple Sideswar; 11. Group of temples. Bobeneswar, Orissa.—22. View of the Great Temple of Juggernaut, showing the lion's gate and beautiful monolith; 23. The Street leading to the Great Temple. Pooree. CAPTAIN HENRY DIXON.

In one frame.

4430. [8008] Idols carved out of rock, in the Badamee Caves; Carved Juggernauth Car; Stone ditto; Stone Idol called Rockus (the Evil Spirit): Brahminee Bull. Bombay.

Photographed by CAPTAIN SELLON, Bombay Engineers.

4431. [8009] Elephant Stables at Beejanuggur; Temples at ditto; Lesser Fort at Badamee; Linguite. Temple and Tank at Bunshunkeree. Do.

Photographed by CAPTAIN SELLON, Bombay Engineers.

4432. [8010] Wooden Bridge over the Sangum River at Peona; Falls of Gokak; Cocoa-nut Trees; Encampment at Ironey; Banian Tree at Sutguttee. Do.

Photographed by CAPTAIN SELLON, Bombay Engineers.

4433 [8011] Fort at Copal; Large Fort at Badamee: Fort at Irooney, on the Toongabudra; Lesser Fort at Badamee; Hill and Fort of Munshur and Munsuntash. Do.

Photographed by CAPTAIN SELLON, Bombay Engineers.

4434. [8012] Hill and Fort of Nurgoond; Town of ditto; Cotton Carts. Cotton District of S.W. India.

Photographed by CAPTAIN SELLON, Bombay Engineers.

4435. [8013] Mahomedan Temple at Badamee; Temples at Sassoor, West Poona, Temples, Sacred Tanks, Idols, &c., at Mahacote; Grand Hindoo Temple (150 ft. high), at Beejanugger; Linguite Temple at Badamee. Do.

Photographed by CAPTAIN SELLON, Bombay Engineers.

Photographs of the Calcutta Drainage Works at Kotrung.

PETER NICHOLL, Esq.

4436. [2207] Steam brick-making shops.

4437. [2208] Machine-shops, &c.

4438. [2209] View from the works across the river Hooghly.

4439. [2206] Engineer's bungalow.

4440. [2205] Superintendent's bungalow.

4441. [2204] Work-people.

4442. [8014] 1. Dog; 2. Brahmin Priest; 3. An Officer of Irregular Cavalry; 4. A Dancing Beggar; 5. A Gooroo, or Seikh Priest; 6. A Woman selling Indian Corn; 7. A Tailor; 8. A Madras Bandy; 9. A Parsee; 10. A Barber; 11. A Hindoo Woman; 12. Jewellers. CAPTAIN ALLEN N. SCOTT.

In one frame.

4443. [8015] 13. Hindoo Temple, Secunderabad; 14. Tomb at Golconda; 15. Fruit and Flowers; 16. Tomb of a Mahomedan Saint; 17. Tomb and Banian Tree; 18. Hill Fort at Golconda; 19. A Native Cart: 20. Women grinding Wheat; 21. A Bullock Cart; 22. Camels; 23. Dead Tiger; 24. Dead Cheetah or Leopard. CAPTAIN ALLEN N. SCOTT.

In one frame.

4444. [8094] Stereographs of Trichinopoly, Tanjore, Madura, &c., 1855. 2 vols. CAPTAIN TRIPE.

N.B.—Several other volumes of photographs, forming part of this collection, are in the India Museum, Fife House, Whitehall Yard, S.W.

NATIONAL ARCHIVES OF INDIA

4445. [9427] Copy of paintings of the Adjunta Caves.

Photographed by MAJOR GILL.

B.—*Portraits, Single or in Groups.*

4446. [1650] H.H. Mehundur Singh, son of the Maharajah of Puttiala, and heir-apparent to the throne.

4447. [1651] Sirdar Narain Sing, Sahib of Sealbah, son-in-law to the Maharajah.

4448. [1652] Interior of the principal reception-room in the palace of the Maharajah of Puttiala.

4449. [8016] Portraits of natives (15 pictures in one frame). Printed at Industrial School of Arts, Madras.

Photographed by DR. SCOTT.

4450. [8017] Portraits of natives (12 pictures in one frame). Do.

Photographed by DR. SCOTT.

4451. [2210] Lagoatna Brahmin.

4452. [2211] Lagoatna Brahmin.

4453. [2212] Sanoorna Brahmin.

4454. [2213] Bhugela Thakoor.

4455. [2214] A Marwaree.

4456. [2215] Goundhés, or bricklayers (men and women).

4457. [2216] Goundhés Do. Do.

Photographic Likenesses of Natives of various Parts of India.

4458. [8019] Cheeboo Lama, Dowan of Sikhim. DR. SIMPSON.

4459. [8020] Bhootia (Bhotan).

4460. [8021] Bhootia (Thibet).

4461. [8022] Sauwar (Nepaul).

4462. [8023] Bhootia (Sikkim).

4463. [8024] Thibetan.

4464. [8025] Limbo female (Nepaul).

4465. [8026] Lepcha female (Sikkim).

4466. [8027] Sauwar female (Nepaul).

4467. [8028] Bhootia (Thibet).

4468. [8029] Magar (Nepaul).

4469. [8030] Kus (Gookha Nepaul).

4470. [8031] Bhootia (Bhotan), interpreter at the Darjeeling Court.

4471. [8032] Lama Pernianchi Sikkim.

4472. [8033] Lepcha (male), Do.

4473. [8034] Bhootia (female), Lassa Thibet.

4474. [8035] Muddick Group.

4475. [8036] Newar (Nepaul).

4476. [8037] Moormi, Nepaul.

4477. [8038] Limbo, Do.

4478. [8039] Goorung, Do.

4479. [8040] Mech, Terai.

4480. [8041] Lepcha, Sikkim.

4481. [8042] Kamee, Nepaul.

4482. [8043] Bhootia female, Sikkim.

4483. [8044] Oraon Cole female, Chota Nagpore.

4484. [8045] Korwah, Do.

4485. [8046] Rajah Chutroo Gimadhit, Maumboom, Rajpoot.

4486. [8047] Moonda female, Chota Nagpore.

4487. [8048] Cole Christian, Do.

4488. [8049] Rajpoot, Singbhoom.

4489. [8050] Cheeroo, Palamow.

4490. [8051] Bhogta, Chota Nagpore.

4491. [8052] Oran, Do.

4492. [8053] Moonda male, Do.

4493. [8054] Rajwar, Behar.

4494. [8055] Aheer, Shahabad.

4495. [8056] Dosadh, Behar.

4496. [8057] Mullick, Do.

4497. [8058] Musahar, Do.

4498. [8059] Pohariah, Bhaugulpore Hills.

4499. [8060] Garrow.

NATIONAL ARCHIVES OF INDIA

4500. [8061] Maram Nagar, Muneepore.

4501. [8062] Cacharee, Assam.

4502. [8063] Rajbunsee, Koch Behar.

4503. [8064] Burmese.

4504. [8065] Mugh, Akyab.

4505. [8066] Kyang, Burmah.

4506. [8067] Rajpoot Christian, Bhojpore.

4507. [8068] Ghilzie, Kandahar.

4508. [8069] Dooranee, Cabul.

4509. [8070] Persian, Calcutta.

4510. [8071] Lurka Cole, Singbhoom.

4511. [8072] Pathan.

4512. [8073] Tartar horse-dealers, Thibet.

4513. [8074] Bhootan group, Bhootan.

4514. [8075] Goorung group, Nepaul.

4515. [8076] Sunwar family group, Do.

4516. [8077] Lepcha peasants, Sikkim.

4517. [8078] Newar group, Nepaul.

4518. [8079] Kus group, Do.

4519. [8080] Limbo group, Do.

4520. [8081] Mech group, Terai.

4521. [8082] Bhootia group, Bhootan.

4522. [8083] Moormi group, Nepaul.

4523. [8084] Moormi group, Do.

4524. [8085] Lepcha water-carrier.

4525. [8086] Rajbunsee group, Koch Behar.

4526. [8087] Dosadh group, Behar.

4527. [8088] Affghan group, Cabul.

4528. [8089] Korwah group, Chota Nagpore.

4529. [8090] National dance, Coles.

4530. [8091] National dance, Do.

4531. [8092] National dance, Chota Nagpore.

4532. [8093] Santhal group, Bhaugulpore.

4533. [8095] Santhal group, Do.

4534. [2218] A Kuttik Thakoor, Etah district, Agra division.

4535. [2219] A Mahomedan priest, Do.

4536. [2220] A Kamboo Mahomedan, Do.

4537. [2217] A Khateeh, Do.

CLASS XV.—HOROLOGICAL INSTRUMENTS.

4538. [3129] Silver watch (with chain), Ulwar. Presented by H.H. the MAHARAJAH of Ulwar.

This watch is stated to have been made by the watchmaker to H.H. the MAHARAJAH.

NATIONAL ARCHIVES OF INDIA

CLASS XVI.—MUSICAL INSTRUMENTS.

These are few in number, but an almost complete collection is to be found at the India Museum.

4539. [3173] Double-headed drum, Darjeeling. DR. CAMPBELL.

4540. [4462] Burmese gong, Rangoon. Messrs. HALLIDAY, FOX & Co.

4541. [3312] Burmese 'putalah,' Do. Do.

4542. [4459] Small gong, Do. Do.

4543. [4458] Gong tolled after prayer, Do. Do.

4544. [1764] Trumpet made of a human thigh bone, Darjeeling. DR. CAMPBELL.

4545. [4480] Bell hung to the pinnacle of Burmese pagodas, Rangoon. Messrs. HALLIDAY, FOX & Co.

4546. [1766] Horn bells, Darjeeling. DR. CAMPBELL.

4547. [4464] Burmese harp, Rangoon. Messrs. HALLIDAY, FOX & Co.

4548. [1245] Burmese gong. H. S. BAILY, Esq.

4549–50. [8100–9428] Guitars, INDIA MUSEUM.

4551–2. [9429–30] Flageolettos, Do.

4553–4. [9431–2] Fiddles, Do.

4555. [9433] Pair of cymbals, Do.

CLASS XVIII.—COTTON.

The Table (p. 205) shows the value of the cotton goods, including twist and yarn, exported from India to all parts of the world from 1850–51 to 1860–1, and indicates the persistency which has so far attended the Indian export trade in manufactured cotton to various countries. Of the large collection of samples forwarded for exhibition on the present occasion, a selection only has been shown, the remainder, as in other similar instances, having been deposited at the Indian Museum.

Although not manufactured in India, space was readily accorded to the COTTON SUPPLY ASSOCIATION for the exhibition of a complete and important series of specimens illustrating the adaptability of the native or indigenous cotton of India to the manufacture in this country of goods, in every respect, whether dyed or bleached, of first-class quality, and such as, until now, it had been deemed impracticable to produce from 'Indian cotton.'*

* Much credit is due to Mr. R. BURN, of Manchester, for his exertions in this matter.

I.—COTTON YARN AND THREAD.

The collection from India under this head is of very small extent. The samples of fine yarn exhibited by the COTTON SUPPLY ASSOCIATION are, however, worthy of particular attention, as showing the capability of Indian cotton for the manufacture of yarns of high numbers—a fact which is still further illustrated by the numerous specimens of manufactured cotton, chintzes, &c. shown in Case 30.

4556. [5338] Cotton yarn, Sumbulpore, Cuttack.

4557. [5129] Cotton yarn, Piplee, Cuttack.

4558–9. [5485-6] Cotton yarn, Assam. LIEUT. PHAIRE.

4560. [7880] Cotton yarn, Poona.

4561. [1261] Cotton yarn, spun by females with mills termed 'Bhettia,' Broach.

4562. [1265] Cotton yarn, No. 8. Broach.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE VALUE OF COTTON GOODS (INCLUDING TWIST AND YARN) EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED							VALUE OF TOTAL EXPORTED TO ALL PARTS
		UNITED KINGDOM	FRANCE	OTHER PARTS OF EUROPE	AMERICA	CHINA	ARABIAN AND PERSIAN GULFS	OTHER PARTS	
		Value	Value	Value	Value	Value	Value	Value	Value
		£	£	£	£	£	£	£	£
1850-51	Bengal	917	4	..	942	1,289	17,364	93,403	113,919
	Madras	46,054	246	..	54	12	3,261	125,106	174,733
	Bombay	1,830	..	..	..	1,442	267,992	77,735	348,999
	ALL INDIA.	48,801	250	..	996	2,743	288,617	296,244	637,651
1851-52	Bengal	794	..	..	861	929	11,908	103,046	117,538
	Madras	70,163	..	..	..	2	3,087	132,562	205,814
	Bombay	11	..	..	1	774	305,862	118,493	425,141
	ALL INDIA.	70,968	..	..	862	1,705	320,857	354,101	748,493
1852-53	Bengal	461	..	40	1,572	8,310	13,990	99,948	124,321
	Madras	136,095	113	..	1	56	1,521	123,981	261,767
	Bombay	66	112	..	..	1,749	411,663	130,379	543,969
	ALL INDIA.	136,622	225	40	1,573	10,115	427,174	354,308	930,057
1853-54	Bengal	4,681	35	..	2,775	474	16,246	16,125	40,336
	Madras	102,607	..	..	1	..	2,077	105,262	209,946
	Bombay	818	..	..	..	353	363,460	154,226	518,857
	ALL INDIA.	108,106	35	..	2,776	827	381,783	275,613	769,139
1854-55	Bengal	15,018	..	..	270	758	20,125	16,722	52,893
	Madras	68,050	..	..	..	..	700	114,405	183,155
	Bombay	512	..	..	..	3,592	392,965	183,986	581,055
	ALL INDIA.	83,580	..	..	270	4,350	413,790	315,113	817,103
1855-56	Bengal	1,440	814	423	89	1,006	11,288	16,124	31,184
	Madras	35,410	39	..	253	..	648	97,532	133,882
	Bombay	288	..	..	..	553	431,386	181,944	614,171
	ALL INDIA.	37,138	853	423	342	1,559	443,322	295,600	779,237
1856-57	Bengal	5,352	224	185	104	328	33,117	13,23[illegible]	52,536
	Madras	39,952	42	..	40	2	1,086	84,599	125,721
	Bombay	30	..	..	..	878	493,443	208,216	702,567
	ALL INDIA.	45,334	266	185	144	1,208	527,646	306,041	880,824
1857-58	Bengal	1,504	10	350	345	29,210	24,939	25,315	81,673
	Madras	33,515	98	..	..	..	1,246	94,197	129,056
	Bombay	78	..	..	..	2,425	428,534	167,417	598,454
	ALL INDIA.	35,097	108	350	345	31,635	454,719	286,929	809,183
1858-59	Bengal	3,686	238	..	339	229	15,677	13,651	33,820
	Madras	22,594	78	..	..	..	987	89,460	113,119
	Bombay	17	..	..	..	1,198	504,836	160,614	666,665
	ALL INDIA.	26,297	316	..	339	1,427	521,500	263,725	813,604
1859-60	Bengal	1,510	167	35	518	4,816	10,128	9,112	26,286
	Madras	27,284	41	11	1	..	801	83,609	111,747
	Bombay	310	..	..	..	7,558	387,813	229,872	625,553
	ALL INDIA.	29,104	208	46	519	12,374	398,742	322,593	763,586
1860-61	Bengal	293	5	..	246	1,185	3,885	16,762	22,376
	Madras	39,617	822	..	..	5	224	82,419	123,087
	Bombay	17	..	..	..	9,944	433,095	190,596	633,652
	ALL INDIA.	39,927	827	..	246	11,134	437,204	289,777	779,115

4563. [1267] Cotton yarn, No. 16. Broach.

4564. [1264] Cotton yarn, No. 20. Broach.

4565. [1266] Cotton yarn, No. 22. Broach.

4566. [1263] Cotton yarn, No. 30. Broach.

4567. [850] Cotton yarn, Shikarpoor. GOVERNMENT of INDIA.

4568. [9434] Yarn No. 70s double. Spun in Manchester from Broach cotton. COTTON SUPPLY ASSOCIATION.

4568A. [9434A] Yarns Nos. 60s and 80s spun from exotic cotton grown near Madras. COTTON SUPPLY ASSOCIATION.

II.—MUSLINS.

Some excellent specimens of Dacca manufacture are exhibited. The piece referred to in the following note by Mr. H. HOULDSWORTH, is superior to any shown in 1851, the best specimen on that occasion proving to be of No. 357s yarn instead of 380s as in the present instance. It will be seen, however, that, as then, some machine-made muslin in the present Exhibition is superior in point of fineness, according to the mode of computation adopted.

NATIONAL ARCHIVES OF INDIA

'MULMUL KHAS' MUSLIN PIECE.

The number of warp threads in one inch appeared to be . . .	104
And of weft	100
The width of piece	3 feet
The length	31 „
The number of square feet . .	93 „
The weight of the piece . . .	1,565 grs.

The formula by which the numbers of the yarn is deduced from the above is warp threads + weft threads in 1 sq. in. × 144 (in. in 1 sq. ft.) × 7,000 grains × sq. ft. in the piece, and ÷ by 36 in. in a yard × 840 yards in a hank × weight of piece in grains = Nos. of the yarn.

This, if the constants are involved, resolves itself into

$$\frac{\text{threads} + \text{threads} \times \text{sq. ft.} \times 333}{1{,}565 \text{ grs.}}$$

Thus $\frac{204 \times 93 \times 333}{1{,}565} = 380$,—the Nos. of the yarn according to our English mode of computation, which is as follows. A hank of cotton yarn contains 7 ropes or leys, each of 80 threads, each thread being 54 in. long (which is the circumference of the cotton reel). Thus there are 560 threads in one hank (7 × 80) each 54 in. or $1\frac{1}{2}$ yards in length, and $560 \times 1\frac{1}{2} = 840$ yards, the length of 1 hank of cotton yarn, and the fineness is indicated by the number of hanks in one pound of 7,000 grains.

In the French department, in the case of MONS. THIVEL MICHON, of Tavare, there are several pieces of fine muslin or tarletan, woven in France, the yarn of which is No. 440, spun by THOMAS HOULDSWORTH & Co., of Manchester; and there are a few yards of muslin woven of No. 700 yarn: but this last is too imperfect for any purpose, except to point the limits of fineness at which cotton yarn can be woven at all. The pieces of No. 440 are, however, very perfect, and a great advance on any muslin exhibited in 1851, chiefly owing to the introduction since then of HEILMAN'S combing machine for cotton, by which the quality of fine yarn has been vastly improved, and made nearly as perfect as the fibre will admit. A comparison, however, of this muslin with the Dacca piece, as tested by the eye and feel, would lead to the opinion that the Indian piece was the finer. This arises from the difference in the finishing or getting up of the two muslins—the French pieces being got up hard and wiry by means of starch, which coats the threads and makes them appear coarser than they are; while the Dacca muslin is soft, and appears perfectly free from all starch or other dressing. It may also be that the India threads, spun by hand, are more condensed in their substance by the compression of the fingers in the act of spinning than the machine-spun 440 of the Manchester yarn.

The fact, however, still is, that by our mode of computing the fineness of cotton yarn, the French muslin is 15 per cent. finer than that of the Dacca muslin.

It may be of interest to add, that the fineness of the finest select seed, Sea Island cotton fibre, which my firm has ever spun, appears to be from No. 8,000 to 10,000, supposing the fibres to be laid end to end in a continuous line, and assuming each fibre to average $1\frac{1}{2}$ to $1\frac{3}{4}$ in length; thus if we assume the latter length, 1 pound of such fibres would extend nearly 4,770 miles, and 1 grain weight of such fibres would extend about 1,200 yards.*

MUSLINS, ETC.

From DACCA.

4569. [3396] 'Mulmul Khas,' Muslin. HURMOHUN ROY.

4570. [3371] 'Buddon Khas' muslin.

4571. [9435] Checked muslin. Dacca.

4572. [3378] Charkana muslin.

4573. [3366] 'Junglekhassa' muslin.

4574–5. [3401] Striped muslin, 'Dooreah.'

4576. [3400] Spotted muslin, 'Bootee.'

4577. [1707] Striped muslin. JUGGUT CHUNDER DOSS.

4578. [1703] 'Allabully' muslin. JUGGUT CHUNDER DOSS.

4579. [1709] Red spotted muslin, 'Bootee.' CHUNDER DOSS.

4580. [3393] Spotted muslin, 'Bootee.' KHAJEH ABDOOL GUNNY.

4581. [3372] 'Jamdanee' muslin.

4582. [3365] 'Abrowan' muslin.

4583. [3367] 'Sircar Ali' muslin.

4584. [3364] 'Mulmul Khass' muslin.

4585. [3364] 'Mulmul Khass' muslin.

4586. [3370] 'Nyansook' muslin.

4587. [3376] 'Figured muslin.'

4588. [3394] Jamdanee muslin. KHAJEH ABDOOL GUNNY.

4589. [3400] Spotted muslin, 'Bootee.'

4590. [4744] Striped muslin, Assam. CAPT. LLOYD.

4591. [8266] Chunderkoora Mulmul, Hooghly.

4592. [10514] Kurnool muslin, 1st quality, Kurnool. GOVERNMENT of MADRAS.

4593. [10515] Kurnool muslin, 2nd do.

4594. [10516] Kurnool muslin, 3rd do.

4595. [10517] Kurnool muslin, 4th do.

4596. [10518] Kurnool muslin, 5th do.

4597–8. [10627] 'Maderpak' muslins, North Arcot. PETTIANGERI CHETTI and PONNERI JANGAM CHETTI.

The thread used in weaving muslins of this kind is spun from a peculiar kind of cotton, known by the vernacular name of 'Pu Parthi.' The weavers state that they purchase this thread ready spun from a colony of

* H. HOULDSWORTH, Esq.

NATIONAL ARCHIVES OF INDIA

pariahs, who have settled in the neighbourhood, and who have the speciality of its preparation. It is not stated wherein this peculiarity of manufacture chiefly consists, as all that the local report says on this head is, that after the cotton is carefully cleaned and picked it is laid by in cloth bundles for two or three years, when it is rolled in plantain bark and then wound off.

CALICOES, ETC.

4599–4603. [1661–5] Calicoes glazed, Puttiala. H.H. the RAJAH.

4604. [10035] Calicoes glazed, Jullundurh. GOVERNMENT of INDIA.

4605. [3805] Gazereen, Umritsur.

4606. [5214] Gambroon (twilled cotton lining), Khanjurh.

4607. [8272] Gambroon, Sealkote Jail.

4608. [8274] Gambroon, Loodianah Jail.

4609. [866] Doputtas, Ahmedabad.

4610. [7800] Doputtas, Sauganeer.

4611. [7876] Doputtas, yellow, Poonah.

4612. [7869] 'Chudders' (2 pairs), Santepore.

4613. [8269] 'Chudders,' Hooghly.

4614. [5198] Handkerchiefs, Goojerat Jail.

4615. [7801] Handkerchiefs, Sauganeer.

TABLE CLOTHS.

4616. [615] Table cloth, Salem, Madras. GOVERNMENT of INDIA.

4617. [2049] Table cloth, 8 ft. square, 5¼R., Madras.

4618. [2051] Table cloth, (2) damask, 6 ft. square, 3R. each, Madras.

4619. [2642] Table cloth, bleached, Chittledroog.

4620. [1492] Table cloth, coloured, Benares Jail.

4621. [1973] Table cloth, 36 ft. × 7, 12R. each, Broach.

4622. [1974] Table cloth, 36 ft. × 7, 10R. 8A. each, Broach.

4623. [1975] Table cloth, 36 ft. × 7, 11R. each, Broach.

4624. [1979] Table cloth, 7 ft. × 6, 1R. 15A., Broach.

4625. [1996] Table cloth, Allahabad.

4626–7. [3268–9] Table cloth, Jubbulpore School of Industry.

4628. [5199] Table cloth, Lahore Central Jail.

4629–30. [8254–5] Table cloth, coloured, Patna.

4631. [8256] Table cloth, (2), 3 yards square, Beerbhoom.

4632. [8259] Table cloth (2), Beerbhoom.

4633–5. [8263–5] Table cloth (3), Beerbhoom.

4636. [8281] Table cloth (6), various patterns, Dinapore.

NAPKINS AND DOYLEYS.

4637. [417] Napkins, one dozen, 6R. 8A. Madras.

4638. [1976] 'Doyleys,' 1R. per doz., Broach.

4639. [2066] 'Doyleys,' checked (6) 22 inches square, 1R. 5A. Madras.

4640. [2072] 'Doyleys,' coloured check, 3¼ yards square, 1R. 8A. Madras.

4641. [2074] 'Doyleys,' coloured, 12 inches square, 1R. Madras.

4642. [2075] (6) Napkins, checked, 2R. 8A. Madras.

4643. [3270] Napkins, Jubbulpore School of Industry.

4644–5. [5195–6] Napkins, Lahore Central Jail.

4646. [5200] Napkins, Punjaub Jails.

4647. [5202A] Napkins, Punjaub Jails.

4648. [5204]. Napkins, Goojerat Jail.

NATIONAL ARCHIVES OF INDIA

4649. [5205] Napkins, Goojerat Jail.

4650. [5224] Napkins, coloured, Dinapore.

4651. [6325] Napkins, bleached and unbleached, Singapore. COL. COLLYER.

4652–3. [8257–8] 6 large, 6 small, Beerbhoom.

4654. [8280] Napkins, 1R. 8A., Broach.

4655. [8282] Napkins, 5 dozen, Dinapore.

TOWELLINGS, DUSTERS, SHEETINGS, ETC.

4656. [1495] Ribbed, 5R. 6P., Benares Jail. DR. N. H. CHEKE, Superintendent.

4657. [1496] Bathing, 12A., Do. Do.

4658. [1969] 3R., Broach. BOMBAY GOVERNMENT.

4659. [1980] Bathing, 2R., Broach.

4660. [1991] Baden Baden, Allahabad Jail. GOVERNMENT of INDIA.

4661. [1993] Bathing, Allahabad Jail.

4662–3. [2061–2] Ribbed, $1\frac{1}{4}$ yards × 1 yard, Madras. GOVERNMENT of MADRAS.

4664. [5192] Do. Shahpore Jail. GOVERNMENT of INDIA.

4665. [5197] 'Huckaback,' Jhelum Jail.

4666. [5207] 'Huckaback,' Goojerat Jail.

4667. [5208] Dhera Ghazee, Khan Jail.

4668. [5209] Punjab Jails.

4669. [5210] Lahore Central Jail.

4670–71. [5211–12] 'Huckaback,' Ferozepore Jail.

4672. [5568] Bathing, 12R. per doz. Meerut Jail.

4673–4. [8252–3] 2 dozens, Patna.

4675. [8260] (6) Washing, Beerbhoom. GOVERNMENT of INDIA.

4676. [8251] Dusters, 1 dozen, Patna.

4677–8. [766–769] Sheeting. Khyrpoor. H.H. MEER ALI MORAD.

4679. [1138] Moorgode, Belgaum. BOMBAY GOVERNMENT.

4680. [2626] Fine Dungaree, Astagram. GOVERNMENT of MYSORE.

4681. [724] Pillow case, Kutch. H.H. the RAO.

CANVAS.

Canvas for tents, sails, &c. is in India almost entirely made of cotton. The list given below of the tents, &c. manufactured for sale at the Jubbulpore School of Industry, will afford an idea of the variety, sizes, and prices, of a class of appliances in the manufacture of which a large quantity of cotton is yearly consumed.

4682. [3279] Canvas. JUBBULPORE SCHOOL OF INDUSTRY.

LIST OF TENTS AND OTHER ARTICLES MANUFACTURED IN THE JUBBULPORE SCHOOL OF INDUSTRY.

DOUBLE-POLED REGULATION TENTS, of four cloths throughout, with four feet verandah, complete, with carpets, bamboo chicks, purdahs, gunny bags and ropes—

28 feet by 16 feet	670R.
26 do. „ 16 do.	645
24 do. „ 16 do.	600
23 do. „ 14 do.	520

SINGLE-POLED REGULATION TENTS, of four cloths throughout, with four feet verandah, complete as above—

16 feet square	450R.
15 „ „	430
14 „ „	390
13 „ „	350
12 „ „	310

HILL TENTS with four folds of cloth throughout, complete as above—

14 feet square, with two sybans	265R.
13 „ „	240
12 „ „	215
10 „ „	200

SWISS COTTAGE TENTS, double fly, with sybans, complete as above—

16 feet square	390R.
14 „ „	340
13 „ „	320
12 „ „	300

NATIONAL ARCHIVES OF INDIA

ROWTIES, five cloths to the fly, and four to the kunauts, complete as above—

16 feet by 14 feet	210R.
16 do. „ 12 do.	200
14 do. „ 12 do.	185
13 do. „ 12 do.	175

SHAMEEANAHS.

40 feet square, and 12 poles	400R.
30 „ „ 12 „	300
24 „ „ 12 „	225
20 „ „ 8 „	150
18 „ „ 8 „	125
15 „ „ 4 „	90

Carpets and kunauts extra.

BECHOBAH TENTS, five cloths in fly, and four in kunauts, as above—

12 feet square	135R.
10 „ „	120
9 „ „	100
8 „ „	90

SLEEPING PALS, four folds of cloth, including chintz, with lacquered poles, and carpet, with four feet kunauts—

12 feet square	110R.
10 „ „	100

Without carpet, 15R. less.

SERVANTS' PALS.

Madras pattern, 12 feet square	66R.
Bengal „ 12 „ „	55
Necessary tents	27

STABLE TENTS, and every other description of tent, made to order.

Division kunauts to large tents	35R.
„ „ to small do.	30
Bhoots, 3 feet, for increasing the inside of the tent, each	26
„ 2½ feet	20
„ 2 „	18
Tent Thermantidote, carried by one cooly	25
Zenanah kunauts, per running yard	3½
Bath rooms, according to size ordered	0

SUNDRY ARTICLES MANUFACTURED.

Turkey carpets, fine texture, per square yard	4R.
Scotch carpeting, per yard, 33 inches wide	1½
Suttrinjees, per square yard	1⅛
Kidderminster ditto, one yard wide, per yard	1⅛
Plaids of (9) yards English thread	5
Table cloths, of all sizes, per running foot	11A.
Table napkins, per dozen	3½R.
Stamped floor chintz on Doosotee, per piece of 12 yards	4
Towels, per dozen	4
Huckaback towels, per dozen	6½
Bathing towels, per dozen	7½
Horse clothing, per thân of 12 yards	4
Horse rollers, to match the above	2

The tents are made of the best materials and of new cloth. Brass eyelets are used in lieu of leather ones; the ropes are all manufactured with English machinery, and will be found far superior to, and more durable than, ropes made with country machines.

4683. [3274] 'Dosootee,' Jubbulpore School of Industry. GOVERNMENT of INDIA.

4684. [967] Canvas, eight samples of various texture, Rewa Kanta. GOVERNMENT of BOMBAY.

4685. [1288] 'Purum.' Narrow strips, Dharwar. W. C. ANDERSON, Esq.

These strips are sewn together, and used as curtains for the front of shops and houses, and also as tents to protect goods on transit. This is made of the waste warp-ends of pieces of cotton cloth joined together.

4686. [1289] 'Purum.' Another description used more for making bags, &c. Half-piece, 9A. Do.

4687. [1290] 'Kadee.' Common white cotton cloth, used in great quantities for all purposes, 2R. 8A. Do. Do.

4688. [1293] Tape. Principally used for lacing of cot frames for sleeping upon, and also in making horse trappings, 1R. 6A.

4689. [1298] 'Gint,' two-thread cloth, used by the working classes for making breeches, &c., 1R. 12A., Do. Do.

4690. [1981] (2) for Tents, 18 yards, 4R. per piece, Broach. GOVERNMENT of BOMBAY.

4691. [1995] for Tents, Ahmedabad Jail. GOVERNMENT of INDIA.

4692. [5289] 'Dosootee,' for Tents, two-thread, Meerut Jail.

4693–4. [5291-2] 'Teensootee,' for Tents, Meerut Jail.

4695. [10579] for Tents, North Arcot, Madras. GOVERNMENT of MADRAS.

COTTON PIECE GOODS (COLOURED), CHINTZES, ETC. ETC.

4696. [705] Striped 'Neelo Kakamia,' Kutch. H. H. the RAO.

4697. [711] Coloured stripe, Kutch.

4698. [719] 'Phaleu,' coloured stripe, Kutch.

4699. [725] Checked, Kutch.

4700. [727] 'Tanjeri,' Kutch.

4701. [730] 'Puncheree,' Kutch.

4702. [806] Coarse, Kutch.

4703. [869] 'Chowtarah,' 32½ ft. × 2 ft. 2 in., 2R. 4A., Ahmedabad. BOMBAY GOVERNMENT.

4704. [870] 'Chowtara,' 16½ ft. × 2 ft. 6 in., 2R. 3A. 2P., Ahmedabad.

NATIONAL ARCHIVES OF INDIA

4705. [853] 'Elacha,' 12 ft. × 2 ft. 9 in., 15A., Ahmedabad. BOMBAY GOVERNMENT.

4706. [883] 'Kholia,' Ahmedabad.

4707. [931] 'Kholia.' 3 ft. 6 in. × 1 ft. 6 in. 1R. 8A., Ahmedabad. NEKNAMDAR SHETANEE HURKOOVURBHAEE.

4708. [1087] Checked, Broach. BOMBAY GOVERNMENT.

4709. [1251] Checked, 26 yards, 5R. 14A., Broach.

4710. [1253] Do., 6¾ do., 2R., Broach.

4711. [1254] Do., 25 do. × 2 ft., Broach.

4712. [1257] Do., 26 yards, 6R. 8A., Broach.

4713. [1985] Duck, 10 yards, 5R., Broach.

4714. [1986] Checked, 10½ yards, 2R. 10A., Broach.

4715. [2077] Blue drill, 3 yards, 10A. per yard, Madras. GOVERNMENT of MADRAS.

4716. [2078] Checked do., 3 do. × 28 in. 10A. do., Madras.

4717. [2079] Blue stripe, 3 do., 9A. do., Madras.

4718. [2080] Blue ticken, 3 do., 9A. do., Madras.

4719. [2081] Do., 3 do., 9A. do., Madras.

4720. [2082] Horse 'Jhool,' 4 ft. wide, 1¼R. do., Madras.

4721. [2083] 'Horse Jhool,' 1 yard broad, 9A., Madras.

4722. [2628] Thick four-thread, Astagram. GOVERNMENT of MYSORE.

4723. [3193] Striped, Darjeeling. DR. CAMPBELL.

4724. [5033] Coloured, Dharwar. BOMBAY GOVERNMENT.

4725. [5201] 'Guzzee,' second quality, Sirsah Jail. GOVERNMENT of INDIA.

4726. [5202B] Punjaub Jail.

4727. [5203] 'Dosootee,' Goojerat Jail.

4728. [5215] Printed, Seetapore, Oude. GOVERNMENT of INDIA.

4729. [5238] 'Lahanza,' green, Lucknow.

4730. [5239] 'Lahanza,' blue, Lucknow.

4731. [5240] 'Urhnee,' Lucknow.

4732. [9436] Two pieces checked cotton, Hyderabad.

4733–4–5. [5241–2–3] 'Mughie,' Chittagong. GOVERNMENT of INDIA.

4736. [5293] Imitation of Duck, Meerut Jail.

4737. [5561] Common quality, Cuttack.

4738. [5562] Medium quality, 3s., Cuttack.

4739. [7875] 'Joth,' 2R. 4A., Poonah. GOVERNMENT of BOMBAY.

4740. [8262] 'Dimity,' Beerbhoom. GOVERNMENT of INDIA.

4741. [8270] 'Nawar,' or band, Sirsah Jail.

4742. [8271] Punjaub Jails.

4743. [8273] 'Konia Bor Kapoo,' Durrang, Assam. LIEUT. W. PHAIRE.

4744–5. [8275–6] Checked, Bhaugulpore. GOVERNMENT of INDIA.

4746. [8277] 'Selleng,' Durrang, Assam. LIEUT. W. PHAIRE.

4747–8. [8278–9] Checked, Bhaugulpore. GOVERNMENT of INDIA.

4749–51. [8289–91] Checked, Lucknow.

4752. [9211] Striped, Bhaugulpore.

4753. [751] Chintz, 3R. 4A., Khyrpoor. H. H. MEER ALI MORAD.

4754. [753] Chintz, 3R. 4A., Khyrpoor.

4755. [755] Chintz, 2R. 8A., Khyrpoor.

4756. [757] Chintz, 2R. 4A., Khyrpoor.

4757. [758] Chintz, 2R. 4A., Khyrpoor.

4758. [759] Chintz (2), 2R. 8A., Khyrpoor. H. H. MEER ALI MORAD.

NATIONAL ARCHIVES OF INDIA

4759. [760] Chintz, 1R. 10A., Khyrpoor.

4760. [1035] Chintz, 3R. 13A., Hyderabad. BOMBAY GOVERNMENT.

4761–3. [7796–8] Printed, Sauganeer. BOMBAY GOVERNMENT.

4764–72. [10536–44] Chintz, North Arcot, Madras. VENKATA RAO and BAPANO RAO.

4773. [10545] Chintz, North Arcot. A. RAB RAO.

4774. [10546] Chintz, North Arcot. BASETH RAO.

4775. [9437] Four pieces of Chintz, Hyderabad.

4776. [8294] Cotton printed fabrics (various), in Case 30. Manufactured exclusively from East India Cotton, exhibited by the COTTON SUPPLY ASSOCIATION, *Manchester.*

These fabrics, manufactured by Mr. J. Cheetham; bleached by Messrs. Eden & Thwaites; dyed by Messrs. Ainsworth, Son & Co., F. Steiner & Co., and Greenwood & Lieber; printed by Messrs. McNaughtan & Thom, Thomas Hoyle & Sons, Salis Schwabe & Co., Daniel Lee & Co., Walter Crum & Co., Daglish & Co., Inglis & Wakefield, Thomas Clarkson & Co., Grimshaw, Gibson & Co., Edmund Potter & Co., and F. & W. Grafton & Co., prove the capability of *Indian Cotton* for the production of goods of *first class quality* in every respect.

4777. [9438] Specimens of Furniture Chintz, manufactured exclusively of Indian Cotton. Printed by THOMAS CLARKSON & Co. (Case 24.) COTTON SUPPLY ASSOCIATION.

The under-noted specimens of cotton manufactures, for which space could not be found, are deposited for reference at the Indian Museum; viz., towellings from Beerbhoom; Jails in the Punjaub; Benares Jail; Jubbulpore School of Industry; Dinapore; Patna; Allahabad; Mysore; Madras; and Broach.

Table-cloths from Beerbhoom and Benares Jail; Mysore; Madras; Broach.

Sheetings from Mysore; Madras; Dharwar; Broach.

Gambroon and chintzes, Sealkote Jail; Khyrpoor, H.H. MEER ALI MORAD; Hyderabad and Chundawarra.

Striped, checked, and other cottons, from Allahabad; Bhandere; Darjeeling, DR. CAMPBELL; Hooghly; Jaloun; Jhansee; Jubbulpore; Lucknow; Meerut; Jails in the Punjaub, &c.; Madras; Ahmedabad; Broach; Belgaum; Dharwar; Shikarpoor; and Poonah.

CLASS XIX.—MANUFACTURES IN FLAX, HEMP, AND OTHER FIBRES.

Of manufactures belonging to this class exported from India, those furnished by Jute occupy an important position. The amount of these may be again seen by reference to the Table (p. 142). The Table (p. 146) likewise indicates that a certain proportion of 'Hemp,' in the manufactured form of rope, is also exported.

4778. [5962] Twilled cloth and sacks, No. 1, Baranagore. BORNEO COMPANY (LIMITED).

4779. [5960] Twilled cloth and sacks, No. 2.

4780. [5961] Twilled cloth and sacks, No. 3.

4781. [5964] Plain power-loom bag, C.

4782. [5963] Twilled jail bag.

4783. [5965] American gunny cloth.

The above specimens were manufactured at the steam works of the 'BORNEO COMPANY, LIMITED,' at Baranagore, near Calcutta. The Company work up about 400 tons of jute monthly, and employ 2,500 natives. Contributed by THOS. DUFF, Esq., Manager and Agent.

4784. [5290] One piece of canvas made of hemp, Meerut.

Made by the prisoners in the jail at Meerut.

NATIONAL ARCHIVES OF INDIA

4785. [5289] One piece of Dosootee (made of two threads) for tent-making.

Made by the prisoners in the jail at Meerut.

4786. [5291] One piece of Teensootee (made of three threads) for tent-making.

Made by the prisoners in the jail at Meerut.

4787. [5292] One piece of broad Dosootee (two threads) for tent-making.

Made by the prisoners in the jail at Meerut.

4788. [9237] Bag-a-Chut, Peshawur.

4789. [10312] Sacking of aloe fibre, Chota Nagpore.

Made in the Hazareebaugh jail by prisoners.

4790. [5197] Newar cloth, Jhelum Jail. CENTRAL COMMITTEE, *Lahore.*

4791. [8270] Newar cloth, Sirsa Jail. Do.

4792. [3192] Four specimens of jute cloth, Darjeeling. DR. A. CAMPBELL.

4793. [9271] *Crotalaria juncea,* Gunny cloth or rope for sackcloth, Lucknow.

This is sackcloth manufactured from the fibre of the above, used for making bags and sacks of various sorts.

4794–5. [9331–2] Two pieces of cloth made from the fibre of the stinging-nettle, Nepaul. H.H. SIR JUNG BAHADOOR, K.C.B.

These specimens are very inferior, but in the cold season the Hill people bring into Katmandoo small quantities of a very superior quality, which very much resembles thick canvas.

4796. [5267] Net of Rhea fibre, Assam.

Presented by H. BAINBRIDGE, Esq.

Fabrics manufactured from Aloe Fibre.

4797. [10306] Raw aloe fibre, Central Prison, Bareilly.

4798. [10306] Dyed aloe fibre, Do. Do.

4799–4800. [8139–45] Cloth made of aloe fibre dyed. INDIA MUSEUM.

The following specimens are exhibited by DR. R. RIDDELL :—

4801. [8148] Cloth made of aloe fibre dyed.

4802. [8149] Cloth made of aloe, double fibre.

4803. [8150] Cloth made of aloe fibre and cotton.

4804. [8151] Cloth made of aloe fibre and silk.

4805. [8152] Cloth made of aloe fibre and Tusser silk.

4806. [8153] Cloth made of aloe fibre dyed and silk.

4807. [8154] Cloth made of coloured aloe fibre.

VI.—*Cordage of all Kinds.*

4808. [5946] Rope Manilla, of plantain fibre.

Running rigging for ships, or tackling for land purposes.

4809–10. [5940–42] Rope, West Indian hemp (*Cannabis sativa*). Do.

Standing rigging for ships, or for use in water.

4811–12. [5937–9] Do. of *Sesbania aculeata.*

Running rigging for ships, and tackling for land purposes.

4813. [5938] Do., Coir (cocoa-nut fibre).

Boats' and ships' running gear and hawsers for cables, also for all tackling purposes when exposed to wet, especially salt water.

4814. [5944] Do., of *Crotalaria juncea.*

Tackling in dry places without exposure to wet. These specimens will shew the great improvement in the manufacture of the various kinds of cordage in India since 1851.

The foregoing were manufactured at the Shal-i-mar Ropery, Seebpore, near Calcutta, by the Exhibitors, Messrs. AHMUTTY & Co.

4815. [10074] Rope of a fibrous plant called Chuyan, Lahore.

4816. [10062] Rope, Sunn Okra, Lahore.

4817. [10061] Rope, common hemp (*Cannabis sativa*), Lahore.

4818. [10064] Rope, fibre called Bugar, Lahore.

4819–20. [10044–5] Rope, two samples, Lahore.

Made in the Shahpore Jail. CENTRAL COMMITTEE, *Lahore.*

NATIONAL ARCHIVES OF INDIA

4821. [10059] Rope, made of palm leaves, Do. CENTRAL COMMITTEE, *Lahore.*

4822. [10069] Rope made of Dah grass, Lahore. CENTRAL COMMITTEE, *Lahore.*

4823. [10065] Rope made of plantain leaves, Lahore.

4824. [5898] Rope of Bail grass, Assam. LIEUT. PHAIRE.

4825. [5330] Rope (*Urtica tenacissima*), Luckimpore. JADOORAN BOROOAH.

4826. [5336] Rope (*Sesbania aculeata*), Luckimpore. H. L. MICHEL, Esq.

4827. [5678] Rope (four samples), TEZPORE JAIL.

4828–9. [5264–5] String of twisted Rhea fibre, Assam. H. BAINBRIDGE, Esq.

4830. [7754] Bowstring of Moorgave fibre (*Sanseviera zeylanica*), Assam.

4831. [5566] Rope of cotton, Meerut Jail. GOVERNMENT of INDIA.

4832. [10313] Rope of aloe fibre, Chota Nagpore.

4833. [10315] Twine of aloe fibre, Chota Nagpore.

4834. [5953] Rope of *Sacharum Moonja*, Lucknow.

Twine made from the fibre of the leaf sheath: a kind little thicker than the present specimen is used for towing boats; when dry it does not possess much strength, when wet it is strong and durable. The moonj is used for ropes, thatching, &c.

4835. [5957] Twine of *Crotalaria juncea*, Lucknow.

4836. [7761] Rope of Agave fibre, Balasore.

4837. [7762] Rope of Moorgave fibre, Balasore.

4838. [7763] Rope of Curved Agave fibre, Balasore.

4839. [7757] Rope of Sealee fibre, Balasore.

4840. [7760] Rope of *Sterculia ramosa*, Cuttack.

4841. [5949] Twine of *Crotalaria juncea*, Hooghly. GOVERNMENT of INDIA.

4842–3. [7755–6] Cord and fibre of Red Sterculia bast, Moulmein.

4844. [4094] Rope of rattan (two samples), Penang, Malay Peninsula. SINGAPORE COMMITTEE.

Used for drawing water, and as halters for cattle.

4845. [4751] Rope of bast, Burmah. Messrs. HALLIDAY, FOX & Co.

4846. [2889] Rope of 'Mole,' Poonah. BOMBAY GOVERNMENT.

4847. [4873] Rope of Palmyra fibre (*Borassus flabelliformis*), Chingleput, Madras. DR. SHORTT.

From Bangalore, Mysore. DR. KIRKPATRICK.

4848. [2727] Rope of Plantain fibre (*Musa paradisiaca*).

4849. [2728] Rope of Cocoa-nut fibre (*Cocos nucifera*).

4850. [2729] Rope of Dudi fibre.

4851. [2730] Rope of Pundi fibre.

4852. [2732] Rope of Sereum fibre (*Calotropis gigantea*).

4853. [2733] Rope of *Yucca gloriosa.*

4854–5. [2683–4] Ropes of cotton, Astagram, Mysore.

The undernamed specimens belonging to this class, forming a portion of the consignments from India to the Exhibition, are for the present deposited in the INDIA MUSEUM.

Samples of canvas, gunny cloths, &c. from Lucknow; Hooghly; Darjeeling; Lahore; Guzerat; Rajgolee; North Arcot; Broach; Poona; Rewa Kanta, &c.; and bolts of canvas, by the BORNEO COMPANY, LIMITED.

And of cordage and twine as under—

4856. [5950] Rope of *Gossypium herbaceum*, Lucknow. GOVERNMENT of INDIA.

Produced all over Oude. This kind of rope is made of cotton thread, and is used for hanging and pulling punkahs, and the ropes of all tents are made of it; it is considerably strong.

4857. [5951] Rope Koombhee, Lucknow. GOVERNMENT of INDIA.

4858. [5956] Rope of *Crotalaria juncea*, Lucknow.

4859. [5954] Rope of Bunkuss, Lucknow.

NATIONAL ARCHIVES OF INDIA

4860. [5955] Rope of *Hibiscus cannabinus*, Lucknow.

4861. [9172] Rope of Sunn, Ulwar. H.H. the MAHARAJAH.

4862. [9173] Rope of Moonj, Ulwar. H.H. the MAHARAJAH.

4863. [9174] Rope of cotton, Ulwar. H.H. the MAHARAJAH.

4864. [2932] Rope of aloe plant for tent-makers, Meerut. GOVERNMENT of INDIA.

4865. [10066] Rope of the Phalsa tree and bark (*Grewia asiatica*), Lahore.

4866. [10068] Rope of a grass called 'Dib,' Lahore.

4867. [10072] Rope of Madar plant, Lahore.

4868. [10067] String of the Putta plant, Lahore.

4869. [5263] Rope (ten samples), Calcutta. Messrs. AHMUTY & Co.

4870-1. [5958-9] Ropes, Hooghly. GOVERNMENT of INDIA.

4872. [2731] Rope of *Cannabis sativa*, Mysore. DR. KIRKPATRICK.

4873. [779] Twine of hemp (2 lbs.), Khyrpoor. H.H. MEER ALI MORAD.

4874. [7889] Twine of aloe fibre, Poonah. BOMBAY GOVERNMENT.

4875. [2886] Rope of hemp, Do. Do.

4876. [7890] Rope of flax, Do. Do.

4877. [7894] Rope of 'Ghayal,' Do. Do.

4878. [6346] Rope of Manilla plantain fibre, Manilla. HON. COL. CAVANAGH.

CLASS XX.—SILK AND VELVET.

The quantity, in pieces, and value of the silk goods exported from India and each Presidency to all parts of the world will be seen by referring to the Table (p. 215).

I.—SILK YARNS.

With the exception of the specimens under-noted, these have already been entered under Section B, Class IV. pp. 102, 103.

4879. [775] Thirteen specimens of dyed silk yarn, Khyrpore. H.H. MEER ALI MORAD.

4880. [8227] Silk thread, Assam. LIEUT. W. PHAIRE.

4881-2. [8228-9] Silk thread (Moonga), Assam. LIEUT. W. PHAIRE.

4883. [5471] Ornamental fastening of red silk thread, Lahore.

4884. [5469] 'Fly protectors,' Lahore.

II.—PLAIN AND FANCY SILKS.

4885. [3147] Fifteen silk pieces of colours, Berhampore. GOVERNMENT of INDIA.

4886. [3150] Silk piece, Berhampore.

4887. [6630] Silk piece, white, Berhampore.

4888-9. [1744-5] Silk pieces, Benares. GOOLBADAN THAN. GOVERNMENT of INDIA.

4890. [5075] Silk piece, white gauze, Nimtollah, Midnapore. RAM DOSS, manufacturer.

4891. [8202] Silk piece, orange check, Dasspore. RAM GUI, manufacturer. GOVERNMENT of INDIA.

4892. [8201] Silk piece, white, Dasspore. MADHUB PORRAMANICK, manufacturer.

4893. [8200] Silk piece, red gauze, Dasspore. KRISTO PORRAMANICK, manufacturer.

4894. [8204] Silk piece, white, Dasspore. KRISTO PORRAMANICK, manufacturer.

4895. [8199] Silk piece, figured, Puddumpore, Midnapore. KARTIC NUNDEE, manufacturer.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF SILK GOODS (EXCLUSIVE OF CHUSSUMS) EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED																		TOTAL EXPORTED TO ALL PARTS	
		UNITED KINGDOM		FRANCE		OTHER PARTS OF EUROPE		AMERICA		CHINA		ARABIAN AND PERSIAN GULFS		ADEN AND SUEZ		STRAITS SETTLEMENTS		OTHER PARTS			
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£
1850-51	Bengal	559,892	309,419	1,957	1,259	1,032	720	7,543	4,330	559	730	908	275	..	..	23,154	12,955	4,559	2,974	599,604	332,657
	Madras	21	55	..	..	..	..	..	..	..	..	7	11	..	..	3,781	1,805	34	38	3,843	1,909
	Bombay	571	1,737	..	..	..	..	..	..	983	304	19,337	11,138	855	517	6,237	4,267	2,594	2,694	30,577	20,657
	ALL INDIA	560,484	311,211	1,957	1,259	1,032	720	7,543	4,330	1,542	1,034	20,252	11,424	855	517	33,172	19,027	7,187	5,706	634,024	355,223
1851-52	Bengal	408,256	224,406	405	266	294	182	2,089	1,058	76	42	259	75	..	..	1,006	417	27,230	13,288	439,615	239,734
	Madras	36	96	..	..	..	..	..	..	..	..	..	..	..	..	129	68	472	228	637	392
	Bombay	12	33	..	..	4	4	15	6	9,050	955	10,498	7,867	935	834	15,185	7,661	3,256	2,739	38,955	20,099
	ALL INDIA	408,304	224,535	405	266	298	186	2,104	1,064	9,126	997	10,757	7,942	935	834	16,320	8,146	30,958	16,255	479,207	260,225
1852-53	Bengal	502,960	267,803	423	230	1,879	1,010	2,608	1,455	..	276	2,407	897	..	..	..	777	..	14,725	..	287,173
	Madras	25	51	..	..	..	..	..	..	..	..	203	67	..	..	67	42	5,977	621	6,272	781
	Bombay	..	2	..	..	..	..	..	..	..	211	..	15,892	..	1,728	11,460	7,035	..	2,378	..	27,241
	ALL INDIA	502,985	267,856	423	230	1,879	1,010	2,608	1,455	..	487	..	16,856	..	1,723	..	7,854	..	17,724	..	315,195
1853-54	Bengal	522,883	276,747	2,128	1,068	1,004	502	12,577	7,431	262	215	429	105	9,113	4,802	2,055	997	19,312	9,804	569,763	301,671
	Madras	17	29	..	..	..	..	..	..	..	..	..	..	..	..	79	42	1,692	790	1,788	861
	Bombay	..	53	..	..	..	..	..	..	..	150	..	5,149	..	1,382	..	4,322	..	2,743	..	13,799
	ALL INDIA	..	276,829	2,128	1,068	1,004	502	12,577	7,431	..	365	..	5,254	..	6,184	..	5,361	..	13,337	..	316,331
1854-55	Bengal	443,187	230,214	..	923	6	3	5,244	3,470	..	30	1,461	436	11,830	6,022	1,890	578	16,273	6,901	479,891	248,577
	Madras	26	51	..	..	..	..	..	..	..	..	..	..	..	..	1,349	863	846	720	2,221	1,634
	Bombay	4	19	..	..	..	..	..	..	1,277	172	19,061	6,874	5,135	2,936	4,372	1,788	2,009	1,453	31,858	13,242
	ALL INDIA	443,217	230,284	..	923	6	3	5,244	3,470	..	202	20,522	7,310	16,965	8,958	7,611	3,229	19,128	9,074	513,970	263,453
1855-56	Bengal	569,104	317,183	297	211	606	318	3,339	1,940	36	23	5,572	1,334	3,773	2,589	1,215	377	2,027	1,033	585,969	325,008
	Madras	45	243	..	..	..	..	..	..	..	..	..	..	..	..	2,428	1,327	1,205	880	3,678	2,450
	Bombay	140	128	..	10	..	..	..	..	79	172	8,604	5,227	6,684	4,434	9,207	1,349	2,322	1,257	27,036	13,577
	ALL INDIA	569,289	317,554	297	221	606	318	3,339	1,940	115	195	14,176	7,561	10,457	7,023	12,850	3,053	5,554	3,170	616,683	341,035
1856-57	Bengal	437,860	241,230	3,108	1,618	153	109	2,187	1,243	..	71	3,928	959	3,587	2,016	..	620	..	853	452,431	248,719
	Madras	40	119	..	..	..	..	..	..	..	..	..	..	..	..	749	482	856	685	1,645	1,286
	Bombay	..	54	..	..	..	..	..	..	2,158	624	..	14,300	..	9,320	13,668	4,560	..	2,587	..	31,445
	ALL INDIA	..	241,403	3,108	1,618	153	109	2,187	1,243	..	695	..	15,259	..	11,336	..	5,662	..	4,125	..	281,450
1857-58	Bengal	154,510	92,682	..	570	455	250	..	354	14	7	219	120	3,526	3,185	..	4,081	..	2,014	..	103,261
	Madras	15	10	..	..	..	..	..	..	..	..	9	3	..	..	44	26	2,051	948	2,119	987
	Bombay	..	..	..	..	..	..	..	..	33,720	1,368	..	27,130	..	16,742	19,078	5,146	..	3,590	..	53,976
	ALL INDIA	154,525	92,692	..	570	455	250	..	354	33,734	1,375	..	27,253	..	19,925	..	9,253	..	6,552	..	158,224
1858-59	Bengal	..	157,374	..	759	..	211	..	234	..	219	..	480	..	1,399	..	322	..	1,958	..	162,956
	Madras	181	221	..	..	..	..	..	..	..	..	..	..	..	..	998	621	1,754	1,295	2,933	2,137
	Bombay	2,800	843	35	72	..	..	..	1,588	..	1,275	..	20,154	..	6,821	..	2,649	..	14,613	..	48,015
	ALL INDIA	..	158,438	..	831	..	211	..	1,822	..	1,494	..	20,634	..	8,220	..	3,592	..	17,866	..	213,108
1859-60	Bengal	275,880	146,212	786	449	447	242	686	995	23	13	61	31	2,629	1,459	1,266	896	4,442	2,499	286,220	152,795
	Madras	..	6	..	..	..	..	1	1	..	..	..	..	..	..	2,604	1,058	1,915	1,396	4,519	2,461
	Bombay	..	120	..	..	..	..	..	..	..	1,071	..	18,748	..	8,098	..	4,299	..	3,917	..	36,253
	ALL INDIA	..	146,338	786	449	447	242	687	996	..	1,083	..	18,779	..	9,557	..	6,253	..	7,812	..	191,509
1860-61	Bengal	167,262	96,493	1,513	916	..	14	823	1,322	25	30	261	121	832	430	..	1,616	..	901	171,847	101,843
	Madras	27	27	..	..	..	..	..	..	..	..	..	..	..	..	115	53	2,098	1,609	2,240	1,689
	Bombay	367	237	2	3	..	..	..	..	7,219	789	13,350	8,547	6,056	3,598	9,085	4,390	1,376	1,691	37,455	19,255
	ALL INDIA	167,656	96,757	1,515	919	..	14	823	1,322	7,244	819	13,611	8,668	6,888	4,028	..	6,059	..	4,201	211,542	122,787

NATIONAL ARCHIVES OF INDIA

4896. [8203] Silk piece, Bellaghat, Midnapore. NOBIN HYTHE, manufacturer.

4897. [9439] Silk piece, Russickgunge. BACHARAM PERA, manufacturer.

4898. [5085] Silk piece, white, Burdwan, BIPRODOSS DUTT, manufacturer. GOVERNMENT of INDIA.

From BURDWAN.

4899. [8206] Silk piece, white. BHOOBUN DUTT, manufacturer. GOVERNMENT of INDIA.

4900. [8207] Silk piece, white. MADHUB DUTT, manufacturer.

4901. [8208] Silk piece, white. NOBOKISSEN DUTT, manufacturer.

4902. [8215] Silk piece, white. NOBOCOMAR NUNDEE, manufacturer.

From MALDA.

4903. [8216] Silk piece, white. GOVERNMENT of INDIA.

4904. [8217] Silk piece, white. GOVERNMENT of INDIA.

4905. [8218] Silk piece, grey. GOVERNMENT of INDIA.

4906. [5092] Silk piece, grey. GOVERNMENT of INDIA.

4907. [8221] Silk piece, figured. BABOO HANS GEER GOSSAIN.

4908. [8222] Silk piece, figured. DR. R. F. THOMPSON.

4909. [5083] Silk piece, figured. T. M. LEWIS, Esq.

4910. [5086] Silk piece, white, Gonatea, Beerbhoom. — RAIT, Esq.

From ASSAM.

4911. [5084] Silk piece, bordered. H. BAINBRIDGE, Esq.

4912. [8232] Silk piece, Bhotan red. H. BAINBRIDGE, Esq.

4913. [5088] Silk piece, yellow. LIEUT. W. PHAIRE.

From PUTTIALA. H.H. THE MAHARAJAH.

4914. [1195] Silk piece, crimson.

4915. [1198] Silk piece, white.

4916. [1199] Silk piece, crimson.

4917. [3777] Silk piece, striped.

4918. [3778] Silk piece, striped.

4919. [3780] Silk piece, striped.

4920. [3781] Silk piece, striped.

From the PUNJAUB. GOVERNMENT OF INDIA.

4921. [3751] Silk piece, red.

4922. [3752] Silk piece, green.

4923. [3753] Silk piece, green, with crimson stripe.

4924. [3754] Silk piece, rose colour.

4925. [3755] Silk piece, yellow.

4926. [3756] Silk piece, scarlet.

4927. [3757] Silk piece, yellow.

4928. [3758] Silk piece, green.

4929. [3759] Silk piece, crimson.

4930. [3760] Silk piece, purple.

4931. [8241] Silk piece, pink.

4932-3. [5465-6] Silk pieces, shot, Peshawur. GOVERNMENT of INDIA.

4934-5. [8247-8] Silk pieces, figured and gold embroidered, Bhawulpore. H.H. the NAWAB.

The principal places of silk manufacture are the cities of Peshawur, Lahore, Umritsur, Mooltan, and the capital of the neighbouring state of Bhawulpore.—The silks of the latter place are considered the best, and the next those of Mooltan.*

4936. [6497] Silk pieces, Bokhara. H.H. the NAWAB PHAIROOLLA KHAN.

4937. [6498] Silk piece, shot, Do. Do.

4938. [6499] Silk piece, red, Do. Do.

4939. [838] Two silk pieces, red, Shikarpoor, Sindh.

BOMBAY AND SOUTHERN INDIA, &c.

AHMEDABAD.

4940. [891] Silk pieces, striped, 12R. 4A. GOVERNMENT of BOMBAY.

4941. [894] Silk pieces, 'Gagrapat.' GOVERNMENT of BOMBAY.

4942. [909] Two pieces 'Gagrapat.' SHETT JAYSINGBHAEE HUTTEESING.

4943-4. [910-911] Four pieces 'Gujeeam.' SHETT JAYSINGBHAEE HUTTEESING.

---

* Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

4945. [937] Two pieces striped Panchputta. BAHADOOR SHETT MUGGUNBHAEE KRAMCHUND.

4946. [915] Figured Panchputta, with stamped figure, 2R. 4A. SHETT JAYSINGBHAEE HUTTEESING.

4947. [916] Panchputta, black. SHETT JAYSINGBHAEE HUTTEESING.

4948. [917] Figured silk, crimson. SHETT JAYSINGBHAEE HUTTEESING.

4949. [2606] Silk piece, checked, Bangalore, Mysore. GOVERNMENT of MYSORE.

III.—HANDKERCHIEFS.

4950. [8231] Silk piece for handkerchiefs (Bhootan), Assam. H. BAINBRIDGE, Esq.

4951. [7870] Silk piece, Santipore. GOVERNMENT of INDIA.

4952. [2369] Silk piece, red check, Chittledroog, Mysore. GOVERNMENT of MYSORE.

4953. [2637] Silk piece, Astagram, Mysore.

MUSHROOS.

Satins, the back or warp of which consists of cotton.

4954-5. [1746-7] Mushroos, Benares. GOVERNMENT of INDIA.

From AHMEDABAD.

4956. [933] Mushroos, six pieces, 2R. 4A. per yd. BAHADOOR SHETT MUGGUNBHAEE KRAMCHUND.

4957. [934] Mushroo, 3R. 8A. per yd.

4958. [935] Mushroo, 4R. per yd.

4959. [936] 'Hemroo,' 2R. per yd.

4960. [944] 'Panchputta,' 11A. 6P. per yd. NUGGER SHETT PREMABHAEE HEMABHAEE.

4961. [945] 'Chumkhee' (red), 1R. per yd.

4962. [946] 'Chumkhee' (blue and white stripe), 1R. per yd.

4963. [947] 'Chumkhee' (white and red stripe), 1R. per yd.

4964. [948] 'Chumkhee' (Goolkhar), 1R. per yd.

4965. [949] 'Chumkhee' (Goolkhar Choondry), 1R. 6A. per yd.

From KUTCH. H.H. the RAO.

4966. [697] 'Chumkhee,' 1R. 6A. 10P. per yd.

4967. [698] 'Chumkhee,' 2R. 7A. 1P. per yd.

4968. [699] 'Chumkhee,' 2R. 7A. 1P. per yd.

4969. [702] 'Chumkhee,' 2R. 7A. 1P. per yd.

4970. [715] 'Chumkhee,' 1R. 2A. 8P. per yd.

4971. [716] 'Chumkhee,' 1R. 6A. 4P. per yd.

TUSSUR SILK.

From BEERBHOOM.

4972. [5081] Tussur silk piece, plain.

From BHAUGULPORE.

4973-4. [5082-5093] Tussur silk pieces, plain.

4975-6. [5080-82141] Tussur silk pieces, shot.

4977-4982. [5089-90-8210-13] Tussur silk pieces, checked.

From BURDWAN.

4983-87. [5079-8025-8209-9189-90] Tussur silk pieces, with coloured borders and ends.

4988. [9200] Tussur silk piece, plain, Cuttack.

MOONGA SILK.

4989. [7741] Moonga silk piece, Luckimpore. BABOO KISSERAM BOROOAH PESHKAR.

4990. [7743] Moonga silk piece, Luckimpore. BABOO MOHUN CHUNDER.

Used as a mosquito curtain.

4991. [8225] Moonga silk piece, Assam. LIEUT. W. PHAIRE.

ERIA SILK.

4992. [5078] Eria silk piece, Assam. LIEUT.-COL. VETCH.

NATIONAL ARCHIVES OF INDIA

4993. [7742] Eria silk piece, Assam. BABOO JEWRAM DEKA.

4994–5. [8223–4] Two pieces Eria silk, Assam. LIEUT. W. PHAIRE.

As each householder reels, spins, and weaves his own cloth, the holiday attire of the Assamese is usually of silk. In Durrung a thân of good silk measuring 10 yards, can be purchased for from 5 to 10 rupees, according to the fineness. The cloth is occasionally coloured, but the Assamese silks are usually of the natural colour as wound from the cocoon.*

4996. [8230] Two pieces Eria silk, Assam. H. BAINBRIDGE, Esq.

MEZANKOOREE SILK.

4997. [5076] Mezankooree silk piece, bordered, Assam. LIEUT.-COL. VETCH.

4998. [8220] Mezankooree silk piece, bordered, Assam. GOVERNMENT of INDIA.

4999. [8233] Mezankooree silk piece, bordered, Assam. H. BAINBRIDGE, Esq.

CLASS XXI. — WOOLLEN AND WORSTED FABRICS, INCLUDING MIXED FABRICS GENERALLY.

I.—YARNS.

The specimens of woollen yarns—chiefly those from the wool of the Kashmere goat—exhibited, have already been entered in Section B, Class [illegible] pp. 97–99.

II.—WOOLLEN FABRICS, BLANKETINGS, ETC.

Under this head are placed 'cumblies,' a kind of small blanket or rug, generally of a coarse material, used as a covering at night during the cold season, or worn over the head or round the shoulders during the day.

The under-noted articles embrace a selection from the common woollens forwarded for exhibition on the present occasion. The remainder, for which space could not be found, have been deposited at the INDIA MUSEUM.

5000. [2638] Cumblies, white, 26R. Chittledroog. GOVERNMENT of MYSORE.

5001. [2629] Cumblies, 4R. 6A. 4P. Astagram, Mysore.

5002. [2956] Black cumblies, check, Chittledroog, Mysore.

5003. [2658] Cumblies, plain, Chittledroog, Mysore.

5004. [2648] Cumblies, plain, Bangalore, Mysore.

5005. [1153] Cumblies, plain, Belgaum. GOVERNMENT of BOMBAY.

5006. [1160] Cumbly, black, 3R. 4A. Belgaum.

5007–11. [7832–6] Five blankets, Jeypore. H.H. the RAJAH.

5012. [8306] Felt blankets, Peshawur.

5013. [819] Felt cloth, 10R., Shikarpoor.

5014. [1656] Woollen horse cloth 'Taroo,' 3R. 12A., Umritsur.

5015. [1272] Cumbly or blanket, 1R. 8A. Dharwar. W. C. ANDERSON, Esq.

Commonly worn by all classes of natives as a protection from cold, heat, or wet.

5016. [1273] Cumbly, striped, 1R. 12A. Dharwar.

Worn by Lingayut priests.

5017. [1274] 'Numbda,' 8R., Dharwar.

Felt used for sleeping on, and as a pad under saddles.

III.—KASHMERE SHAWLS, ETC.

A large collection of Kashmere shawls has been forwarded. Those exhibited are the result of a careful selection from the very numerous examples sent by the different exhibitors.

* LIEUT. W. PHAIRE.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF KASHMERE SHAWLS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850–51 TO 1860–61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Suez		Other Parts		Total Exported to all Parts	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value
		Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£	Pieces	£
1850–51	Bengal	1,258	15,939	3	9	..	..	168	1,316	..	..	3	14	..	..	26	221	1,458	17,499
	Madras	42	238	..	..	..	..	..	..	..	..	1	7	..	..	..	..	43	245
	Bombay	8,675	118,561	..	..	..	..	..	..	2	105	1,330	16,760	1,830	18,022	67	517	11,904	153,965
	All India	9,975	134,738	3	9	..	..	168	1,316	2	105	1,334	16,781	1,830	18,022	93	738	13,405	171,709
1851–52	Bengal	359	4,758	..	..	..	..	119	1,017	..	..	..	..	..	..	19	154	497	5,929
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	7,137	109,090	1	35	185	3,582	..	..	2	18	1,684	21,079	972	5,725	116	812	10,097	140,341
	All India	7,496	113,848	1	35	185	3,582	119	1,017	2	18	1,684	21,079	972	5,725	135	966	10,594	146,270
1852–53	Bengal	1,048	13,606	1	57	..	..	249	601	..	..	..	..	..	..	2	43	1,300	14,307
	Madras	12	307	..	..	..	..	..	..	..	..	..	..	..	..	1	30	13	337
	Bombay	10,151	165,498	..	..	197	2,906	..	..	14	445	1,554	21,954	1,365	9,446	117	766	13,398	201,015
	All India	11,211	179,411	1	57	197	2,906	249	601	14	445	1,554	21,954	1,365	9,446	120	839	16,711	215,659
1853–54	Bengal	..	5,039	..	3,512	..	30	..	2,732	..	..	..	..	..	10,377	..	420	..	22,110
	Madras	..	236	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	236
	Bombay	8,000	122,659	2	100	..	..	..	..	15	188	912	11,777	1,229	11,110	469	1,973	10,627	147,807
	All India	..	127,934	..	3,612	..	30	..	2,732	15	188	912	11,777	..	21,487	..	2,393	..	170,153
1854–55	Bengal	..	14,730	..	4,368	..	70	..	7,923	..	50	..	..	..	12,652	..	631	..	40,424
	Madras	..	348	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	348
	Bombay	6,941	134,567	39	1,141	..	..	..	..	7	124	536	17,020	447	3,081	1,258	185	8,228	157,118
	All India	..	149,645	..	5,509	..	70	..	7,923	..	174	536	17,020	..	15,733	..	816	..	197,890
1855–56	Bengal	..	14,322	..	16,018	..	10	..	2,021	..	77	..	..	..	18,749	..	152	..	51,349
	Madras	..	716	..	..	..	..	..	..	..	..	..	..	..	..	..	26	..	742
	Bombay	5,745	137,129	54	1,355	..	..	9	37	15	469	578	5,619	1,783	12,159	57	420	8,241	157,188
	All India	..	152,167	..	17,373	..	10	..	2,058	..	546	578	5,619	..	30,908	..	598	..	209,279
1856–57	Bengal	..	10,793	..	5,969	..	495	..	4,239	..	185	..	2	..	11,851	..	339	..	33,873
	Madras	21	139	..	..	..	..	..	..	..	..	..	..	..	..	..	..	21	139
	Bombay	11,479	216,975	41	1,338	..	..	..	..	4	68	850	9,228	4,041	28,342	266	677	16,681	256,628
	All India	..	227,907	..	7,307	..	495	..	4,239	..	253	..	9,230	..	40,193	..	1,016	..	290,640
1857–58	Bengal	..	2,246	..	6,219	..	..	..	2,640	..	321	..	..	..	392	..	39	..	11,857
	Madras	25	245	..	..	..	..	..	..	..	..	..	..	..	..	..	..	25	245
	Bombay	6,788	169,038	384	18,796	..	..	..	..	27	149	1,102	6,407	1,957	19,173	554	1,953	10,812	215,516
	All India	..	171,529	..	25,015	..	..	..	2,640	..	470	1,102	6,407	..	19,565	..	1,992	..	227,618
1858–59	Bengal	..	7,785	..	12,576	..	280	..	1,306	..	8	..	..	..	884	..	135	..	22,974
	Madras	43	255	..	..	..	..	..	..	..	..	..	..	..	..	2	5	45	260
	Bombay	10,265	220,772	1,145	40,325	..	..	..	..	4	115	2,529	17,808	944	7,180	177	593	15,064	286,793
	All India	..	228,812	..	52,901	..	280	..	1,306	..	123	2,529	17,808	..	8,064	..	733	..	310,027
1859–60	Bengal	..	18,534	..	12,513	..	80	..	1,501	..	500	..	..	..	1,972	..	1,672	..	36,772
	Madras	63	526	1	4	..	..	..	..	..	..	..	..	..	..	4	13	68	543
	Bombay	8,339	182,038	245	4,296	9	230	..	..	4	155	1,749	22,984	963	4,858	186	952	11,495	215,513
	All India	..	201,098	..	16,813	..	310	..	1,501	..	655	1,749	22,984	..	6,830	..	2,637	..	252,828
1860–61	Bengal	..	23,520	..	10,748	..	60	..	2,731	..	652	..	..	..	1,542	..	180	..	39,433
	Madras	28	300	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	300
	Bombay	13,598	266,944	1,133	19,144	..	..	..	..	14	437	1,984	16,505	451	7,665	109	665	17,289	311,360
	All India	..	290,764	..	29,892	..	60	..	2,731	..	1,089	1,984	16,505	..	9,207	..	845	..	351,093

NATIONAL ARCHIVES OF INDIA

The importance of this manufacture will be seen by reference to the Table (p. 219), which shows the value, and, as far as can be ascertained, the quantity, in pieces of the Kashmere shawls exported from India for the past eleven years.

The subjoined remarks are by the CENTRAL COMMITTEE, *Lahore.*

This is now by far the most important manufacture in the Punjaub; but thirty years ago it was almost entirely confined to Kashmere. At the period alluded to, a terrible famine visited Kashmere; and, in consequence, numbers of the shawl-weavers emigrated to the Punjaub, and settled in Umritsur, Nurpûr, Dinangar, Tilaknath, Jellapûr, and Loodianah, in all of which places the manufacture continues to flourish. The best shawls of Punjaub manufacture are manufactured at Umritsur, which is also an emporium of the shawl trade. But none of the shawls made in the Punjaub can compete with the best shawls made in Kashmere itself; first, because the Punjaub manufacturers are unable to obtain the finest species of wool; and, secondly, by reason of the inferiority of the dyeing, the excellence of which in Kashmere is attributed to some chemical peculiarity in the water there. On receipt of the raw pashum or shawl wool, the first operation is that of cleaning it: this is done generally by women; the best kind is cleaned with lime and water, but ordinarily the wool is cleaned by being shaken up with flour. The next operation is that of separating the hair from the pashum; this is a tedious operation, and the value of the cloth subsequently manufactured varies with the amount of care bestowed upon it. The wool thus cleaned and sorted is spun into thread with the common 'churka' or native spinning-machine. This is also an operation requiring great care. White pashumeea thread of the finest quality will sometimes cost as much as 2*l.* 10*s.* a lb. The thread is next dyed, and is then ready for the loom, a model of which is included in the collection. The shawls are divided into two great classes —1. Woven shawls, called 'Teliwalah;' 2. Worked shawls.

Shawls of the former class are woven into separate pieces, which are, when required, sewn together with such precision that the sewing is imperceptible. These are the most highly prized of the two. In worked shawls, the pattern is worked with the needle upon a piece of plain pashumeea or shawl cloth.

A woven shawl made at Kashmere of the best materials, and weighing 7 lbs., will cost in Kashmere as much as 300*l.*; of this amount, the cost of the material, including thread, is 30*l.*, the wages of labour, 100*l.*, miscellaneous expenses, 50*l.*, duty, 70*l.*

Besides shawls, various other articles of dress, such as chogas, or outer robes, ladies' opera-cloaks, smoking-caps, gloves, &c. are made of pashumeea.

Latterly great complaints have been made by European firms of the adulteration of the texture of Kashmere shawls; and there is no doubt that such adulteration is practised, especially by mixing up Kirmanee wool with real pashum. In order to provide some guarantee against this, it has been proposed that a guild or company of respectable traders should be formed, who should be empowered to affix on all genuine shawls a trade-mark, which should be a guarantee to the public that the material of the shawl is genuine pashum, especially as the Indian Penal Code provides a punishment for those who counterfeit or falsify trade-marks, or knowingly sell goods marked with counterfeit or false trade-marks.

At Delhi shawls are made up of pashumeea, worked with silk and embroidered with gold lace. A very delicate shawl is made of the wool of a sheep found in the neighbourhood of Ladak and Kûlu: the best wool is procurable in a village near Rampûr, on the Sutlej; hence the fabric is called 'Rampûr chuddder.' Other woollen manufactures in the Punjaub are Peshawur chogas, made of the wool of the Damba sheep, and of camel's hair, and chogas made of Patti, or the hair of the Cabul goat.

SHAWLS, &c., FROM UMRITSUR.

Exhibited by DAVEE SAHAI & CHUMBA MULL, Manufacturers, *Umritsur.*

5018. [4647–50, 4655–69, 4836–40] Shawls, Kashmere.

5019. [4692–4761] Chudders, Kashmere.

5020. [4651–54, 4684–5, 4773–4818] Shawls, Umritsur.

5021. [4772] Shawl, Pudderowah.

5022. [4762–71] Chudders, Rampore.

5023. [4670–79] Caps, woven, Kashmere.

5024. [4680–3, 4823–35, 4925–33] Caps, worked, Kashmere.

5025. [4686–7, 4888–97] Chogas, worked, Kashmere.

5026. [4688–91, 4851–87] Capes, Kashmere.

5027. [4819–21] Bordering, Kashmere.

5028. [4199–4908] Waistcoats, Umritsur.

5029. [4909–19] Children's Jackets, Umritsur.

5030. [4841–50] Pieces of Muleeda, Umritsur.

5030A. [4920–24] Cloaks, Children's, Umritsur.

5030B. [4934–37] Stockings, Ladies', Umritsur.

5030C. [4938–41] Gloves, Gentlemen's, Umritsur.

5030D. [4943–4] Socks, Gentlemen's, Umritsur.

5030E. [5004–8] Scarfs, Kashmere, Umritsur.

Exhibited by MISSUR GEMA CHUND, Manufacturer, *Umritsur.*

5031. [4994–5003] Chudders, Umritsur.

5031A. [4984–93] Capes, Umritsur.

NATIONAL ARCHIVES OF INDIA

Contributed by RAI LALL CHUND, *Bahadoor of Umritsur.*

5032. [4481–89] Shawls, Kashmere.

5033. [4490-95] Shawls, Umritsur.

5033A. [4496–97] Shawls (Jamewar) Noorpoor, Kangra.

Contributor, RAI HUR DYAB, *Umritsur.*

5034. [4498–4500] Shawls (Jamewar), Noorpoor, Kangra.

5035. [4501–13] Shawls, Umritsur.

5035A. [4514–18] Shawls, Lahore.

Contributor, MAHOMMED SHAH SUFFODEEN, *Umritsur.*

5036. [4519–20] Shawls, Kashmere.

5037. [4521–26] Shawls, Umritsur.

5038. [4527–8, 4536–40] Shawls, Noorpoor, Kangra.

5038A. [4531–35] Shawls (Jamewar), Lahore.

5038B. [4529–30] Scarfs, Kashmere.

Contributor, BAHAI KOLYAN SINGH, *Umritsur.*

5039. [4541–54] Shawls, Umritsur.

Contributor, BABOO MOHUN LALL, *Umritsur.*

5040. [4555] Shawl, Umritsur.

5040A. [4556–62] Shawls, Kashmere.

Contributor, GUNPUT BRAHMIN, *Umritsur.*

5041. [4563-71] Shawls, Umritsur.

5042. [4572] Shawl, Kashmere.

5042A. [4576–4609] Scarfs, Umritsur.

SHAWLS, &c., FROM LOODIANAH.

Contributor, MUNSA RAM KANSHIRAM, *Loodianah.*

5043. [1911–22, 1929-30, 1938–9] Shawls

5044. [1923–8] Roomals.

5045. [1932–3] Chudders.

Contributor, KASHIRAM, *Loodianah.*

5046. [4625–42] Shawls.

5046A. [4643–46] Shawls (Jamewar).

Manufacturers, AHMED SHAH and AHSUN SHAH, *Loodianah.*

5047. [1911–22, 1929–30, 1938–9] Shawls.

5048. [1923–8] Roomals.

5049. [1932–3] Chudders.

Manufacturers, HAMEER CHUND and RAM CHUND, *Loodianah.*

5050. [1895–6, 1901–3] Shawls.

5051. [1909] Shawl (Jemawar).

5051A. [1885–94, 1905-8] Chudders.

5051B. [1897–1900, 1904–10] Roomals.

Manufacturer, NOOR MAHOMED SOOFI, *Loodianah.*

5052. [1940–1, 1946–7, 1950–1, 1954–7–8] Shawls.

5053. [1942–5] Shawls (Jemawar).

5054. [1948–9, 1953–59–62] Roomals.

5055. [1952] Scarf.

5055A. [1955–6] Chudders.

Manufacturer, MYA MULL, *Loodianah.*

5056. [1639–40] Shawls.

5057. [1638] Roomals.

5058. [1641–2] Chudders.

Manufacturer, CASHEE RAM, *Loodianah.*

5059. [1965-68–70, 1976–7–82-5] Roomals.

5060. [1973–5, 80–1] Chudders.

5060A. [1966–7, 71–2, 78–9] Shawls.

Manufacturer, CHOTA MULL, *Loodianah.*

5061. [1739] Roomal.

5062. [1740–1, 43–8] Chudders.

5063. [1742] Shawl (Jamewar).

Manufacturer, NIZAM SHAH, *Loodianah.*

5064. [1627-32] Chudders.

5065. [1633–7] Shawls.

Manufacturer, SOOBHANJOO, *Loodianah.*

5066. [1791] Roomal.

5067. [1792] Chudder.

5068. [1793–5, 1816] Cloaks.

5069. [1796] Choga.

5070. [1797] Coat.

5071. [1798-1809] Slippers.

NATIONAL ARCHIVES OF INDIA

5072. [1810–15] Caps.
5072A. [1818–30] Gloves.
5072B. [1831–38] Socks.
5072C. [1839] Bordering.

Manufacturer, NARAIN DOSS, *Loodianah.*

5073. [1875–6, 81] Shawls.
5074. [1877–80] Roomals.
5074A. [1863–74] Caps.

Manufacturer, FUTTEH BUTT, *Loodianah.*

5075. [1842–7] Shawls.
5076. [1848] Roomal.
5077. [1849–50] Scarfs.
5077A. [1851–62] Caps.

Manufacturers, KHUZZERJOO and ABOORJOO, *Loodianah.*

5078. [1785–7] Shawl Cloaks.
5079. [1751–68] Scarfs.
5080. [1769–74] Slippers.
5081. [1775-80] Tobacco Bags.
5081A. [1781–2] Caps.
5081B. [1783-4] Cushion Covers.
5081C. [1789-90] Pieces of Muleeda.

Manufacturer, KHIZZER HAFIZ, *Loodianah.*

5082. [1963] Roomal.
5082A. [1964] Shawl.

5083. [6010–11] Shawls, Rampore. H.H. the NAWAB.

5084. [2225–32] Shawls, Sirinugger.
5085. [2223] Chudder, Sirinugger.
5086. [2234] Chudder, Kangra.
5087. [2340–45] Shawls. UMRITSUR DISTRICT COMMITTEE.
5087A. [2122–3] Chogas. LAHORE CENTRAL COMMITTEE.
5087B. [9413] Shawl, Kashmere.

Imported by Messrs. FARMER & ROGERS, *London.*

III.—SILK SHAWLS

5088. [2603–5] Silk Shawls, Bangalore, Mysore. GOVERNMENT of MYSORE.

IV.—MIXED FABRICS, SOOSEES, ETC.

5089. [3768–76] Soosees, Umritsur.
5090. [1033–4] Soosees, Hyderabad.
5091. [855] Elacha, cotton and silk piece, Ahmedabad.
5092. [5547] Moonga silk and cotton piece, Assam. W. A. O. BECKET, Esq.

CLASS XXII.—CARPETS, RUGS, AND MATS.

The manufactures embraced under this class are likely to eventually occupy an important position amongst articles of export from India to this and other countries.

The substance of the following interesting remarks has been furnished by A. M. DOWLEANS, Esq.

I.—CARPETS.

The chief places in which carpets are manufactured, are Lahore, Meerut, Bareilly, Jubbulpore, Gorruckpore, Mirzapore, Rungpore, and Benares, in the Presidencies of Bengal, the North-West Provinces and the Punjaub, and at Masulipatam in the Madras Presidency.

At Lahore, Meerut, and Bareilly, the manufacture is solely carried on by prisoners in the jails; but as it has only been commenced since the introduction of the new prison discipline, the annual production is limited; so far, however, as quality is concerned, the carpets are excellent. They can be made there of any size and pattern, the average price being from seven to nine shillings per square yard. The great drawback to the exportation of carpets from the above places is the heavy expense of inland transport, which, however, will remedy itself as soon as the three great lines of railway, now in the course of construction, have been completed.

At Jubbulpore, the manufacture of carpets, rugs, and suttringees (cotton carpets), has been regularly carried on for years; chiefly in jail, where Thugs and other prisoners are extensively employed upon them. The Jubbulpore carpets are considered of extremely good texture, and are remarkable for their cheapness. The annual consumption, though large, is limited to a comparatively small area. The nearest place to which they are at present conveyed is Mirzapore, on the Ganges, whence they are forwarded by river boats to Calcutta. The expense of transport from Jubbulpore to Calcutta, including duty and agency charges, &c., is very nearly 90 per cent. on the original cost of the articles at the place of production.

When the railway from Jubbulpore to Bombay is completed, the cost of bringing these carpets to Bombay will be reduced to about 20 per cent. on the cost price, so that a carpet costing at Jubbulpore 10*l.* will be capable of being landed in London for 14*l.* at the outside. The Jubbulpore School of Industry, as it is called, receives direct orders for any amount of carpets, and their fixed prices are as follows:—

Turkey carpets .	. 4R. or	8*s.* 0*d.* per sq. yd.
Scotch carpeting	. 1R. 8A. or	3*s.* 0*d.* per yd. 33 feet wide.
Suttrinjees .	. 1R. 2A. or	2*s.* 3*d.* per sq. yd.
Kidderminster	. 1R. 2A. or	2*s.* 3*d.* per yd. 1 yard wide.

NATIONAL ARCHIVES OF INDIA

At present, however, the places which supply the greater portion of India, as well as the export demand, are Mirzapore and Benares. There is no specific price per yard, as carpets, both at Mirzapore and Benares, are generally sold at so much a piece. The Mirzapore carpets are noted for excellent staple and durability of wear, but are dearer than those from Jubbulpore, though for purposes of export they are cheaper, as the place is situated on the Ganges, and has, therefore, the advantage of easy transport to Calcutta. When the railways come into full operation, the carpets of Mirzapore and Benares will be, in all probability, superseded by those of Meerut, Bareilly, Lahore, and Jubbulpore. The manufacture of carpets is also carried on at Gorruckpore; they are, therefore, more expensive than those of the neighbouring districts of Mirzapore and Benares. In the Madras Presidency, Masulipatam is the chief seat of the manufacture. The trade is carried on to a considerable extent, and entirely by natives, who, as in Bengal, combine it with agricultural undertakings adapted to the season of the year.

The above remarks apply exclusively to carpets not less than 10 feet square.

CARPETS EXHIBITED.

5093. [6487] Carpet made by the Thugs, Lahore. MAJOR MCANDREW.

This carpet is made from the common wool of the Punjaub, obtained from sheep kept in the waste pasture lands of the Lahore district (called the Bah); the thread was spun, dyed, and made up into this carpet at the School of Industry attached to the Thuggee Department at Lahore; the spinning was done by the wives of Thug approvers, and the weaving of the carpet by eight boys, sons of approvers, the eldest of whom is only fourteen years of age.

Approvers are men who have been tried and convicted as having belonged to a band of Thug murderers, but who, having made a full confession of their crimes (in some individual cases amounting to the murders of as many as eighty persons) and denounced their associates, have received a conditional pardon.*

5094. [3296] Large Persian carpet, Lahore.

Made in Mooltan Jail.

Ornamental carpets of thread, with a woollen and sometimes with a silken pile, are made up in Mooltan, Peshawur, Umritsur, Bhawulpore, and Kashmere. Those of Mooltan are perhaps most celebrated.†

5095. [2896] Carpet, Kashmere, Lahore. M. DALLAS, Esq.

5096. [5824] Carpet, large woollen, Meerut Jail. GOVERNMENT of INDIA.

5097. [5981] Carpet, woollen, Meerut Jail.

5098–9. [5345–6] Carpets, 15 feet square, Jubbulpore School of Industry.

Made by Thug prisoners.

5100. [10198] Carpet, Bokhara. NAZIR BHARRULL, *Khan of Peshawur.*

5101–2. [9414–5] Carpet, Masulipatam. Messrs. WATSON, BONTOR & Co., *London.*

5103. [9416] Carpet, Indian manufacture. Messrs. ROBINSON & Co., *London.*

5104. [1493] Carpet, imitation of Kidderminster, Benares Jail. Dr. N. H. CHEKE, *Superintendent.*

II.—RUGS.

The manufacture of rugs is very extensive and comprises many localities. At Peshawur, Bareilly, Shahpore, Sealcote, and Sirsa, the manufacture is entirely confined to the jails. The places, however, where a regular manufacture and trade are carried on, are, Benares, Mirzapore, Allahabad, and Gorruckpore in Bengal; North Arcot, Tanjore, Ellore, and Malabar in the Madras Presidency; and also at Mysore, as well as at Shikarpore, Kyrpore, and Hyderabad in Sinde. Those of Bengal commend themselves by extraordinary cheapness; they are extensively used throughout India, and also somewhat largely exported. In point of texture and workmanship, however, the rugs from Ellore, Tanjore, and Mysore, though they are comparatively much dearer, are greatly preferred.

The employment of rugs throughout India is most extensive, as every native who can afford to purchase one uses it to sit upon and smoke his hookah. It is impossible to form an estimate of the annual value of this manufacture, as only the small portion exported is entered in the official records, and as no steps have hitherto been taken to ascertain the local trade. The rugs made in Bengal vary in length from 3 to 3½ feet; their average width being 1¾ feet, and their value from 1*l.* to 1*l.* 10*s.* The rugs from Ellore, Tanjore, and Mysore are made of various sizes, and are valued from 2*l.* to 4*l.* each; those from Shikarpore and Kyrpore as well as from Hyderabad (Sinde) are of a lighter texture, but excellent workmanship; their width is generally uniform, but in length and consequent cost they vary from 2*l.* to 5*l.* each.

The finest articles of this description, however, are the silk rugs from Tanjore and Mysore, the blending of colours and workmanship being excellent. They are made of all sizes, up to even in squares of 10 feet; but being too costly for general adoption, this manufacture is very limited.*

5105. [5985] Rug, small square, Agra. GOVERNMENT of INDIA.

5106. [5284] Rug, Patna.

5107. [5987] Rug for Buggy (a kind of gig), Sealcote Jail.

5108. [3255] Rug, Allahabad Central Jail.

5109–10. [852–3] Three rugs, Persian, Shikarpoor, Sinde.

5111. [5986] Rug, large, Shikarpoor. Sinde.

5112. [2523] Rug, small, Ahmedabad.

5113–4. [10527–8] Two rugs, North Arcot, Madras. PONNAPA CHETTI, and SUBBI, CHETTI & Co.

* Central Committee, *Lahore.*
† Central Committee, *Lahore.*

* A. M. DOWLEANS, Esq.

NATIONAL ARCHIVES OF INDIA

5115. [2659] Rug, large, Bangalore, Mysore. GOVERNMENT of MYSORE.

5116–7. [10667–8] Two rugs, Ellore, Madras. GOVERNMENT of MADRAS.

5118. [5984] Two rugs. Messrs. ROBINSON & Co., *London.*

5119. [5285] Rug of silk, Bhawulpore. H. H. the NAWAB.

The work of SADIGE and OLA BUKSH, of Khairpore.

5120. [5983] Rug of silk, Madras. INDIA MUSEUM.

5121. [587] Rug of silk, Tanjore. SACCARIM SAHIB, son-in-law of the late RAJAH of TANJORE.

5122. [3256] Rug of aloe fibre, Allahabad Central Prison. GOVERNMENT of INDIA.

5123. [10337] Rug of dyed aloe fibre, Bareilly. Dr. J. M. CUNINGHAM.

SUTTRINGEES, OR COTTON CARPETS AND RUGS.

These fabrics, which are entirely made of cotton, may be considered a cheap substitute for woollen carpets. They are used by every one, European or native, throughout India, and the annual manufacture is consequently very considerable, especially in Bengal, where they form a large and important branch of inland trade. They are of all sizes, from that of the largest carpet to the smallest rug, but generally of one and the same pattern throughout India, the only difference being the colour. Blue and white, and red and white, stripes constitute the prevalent patterns, but in some one colour of darker and lighter hues is employed. In Meerut, Bareilly, and Patna, new patterns have of late been tried with considerable success, but though preferred by the Europeans, are not by natives, who like the striped patterns because they wear better in daily use, and do not lose the freshness of colour by washing. The principal localities where suttringees are manufactured are Agra, Bareilly, Patna, Shahabad, Beerbhoom, and Burdwan. Those manufactured at Agra are considered the best, and the value of its annual production is about 10,000*l.* In Shahabad, the quantity manufactured last year was nearly 7,000*l.*; and the same may be assumed to have been produced in the other places above-mentioned. Suttringees vary in price according to size and quality. The small ones are valued from 3*s.* to 15*s.*, and the larger ones (carpet size) from 1*l.* 10*s.* to 4*l.*, the price in many cases being regulated by weight.*

5124. [5564] Suttringee carpet of cotton, Patna. GOVERNMENT of INDIA.

5125. [10001] Suttringee, or 'Dhurree,' Bhawulpore. H. H. the NAWAB.

5126. [1490] Suttringee, cotton, Benares Jail. Dr. N. H. CHEKE, *Superintendent.*

* A. M. DOWLEANS, Esq.

5127. [1491] Suttringee, English thread, Benares Jail.

5128. [10197] Suttringee, large, of dyed cotton, Bareilly Jail. Dr. J. M. CUNINGHAM, *Superintendent.*

5129. [10338] Suttringee or 'Dhurree,' Bareilly Jail.

5130–1. [5565–7] Suttringee carpets, 'hemp cotton,' Meerut Jail. Dr. J. M. CUNINGHAM.

5132. [8293] Suttringee, Luckimpore. BABOO KISSERAM, *Darojah.*

5133. [3297] Suttringee, common quality, Lahore. Chief of the LOGHASEE TRIBE.

5134. [5988] Suttringee, blue stripe. Patna. GOVERNMENT of INDIA.

5135. [5990] Suttringee, white and blue border, Patna.

5136–7. [10563–7] Suttringee, do., N. Arcot, Madras. SUBBI, CHETTI & Co.

5138. [5982] Suttringee. INDIA MUSEUM.

5139. [1291] Suttringee carpet, blue, Dharwar, 4R. 6A. W. C. ANDERSON, Esq.

Used for sitting and sleeping on. Made of all sizes.

5140. [2954] Suttringee, Shahabad. R. W. BINGHAM, Esq.

5141-2. [2930–1] Striped rugs, Shahabad. R. W. BINGHAM, Esq.

These are made wholly of cotton, and almost invariably striped. From being made of cotton they are cool and pleasant, and are in invariable use by the better class of natives and by all Europeans. The smaller kinds are used as quilts for beds, and of late the Government has given them to its European soldiers for that purpose. The manufacturers, called in this district Kalleeun Bap, are almost invariably Mussulmen of the weaver class, who will make carpets of any size and pattern given in stripes. The two local seats of manufacture in Shahabad are Bubbooah and Sasseeram. In the former place, from 10,000 to 12,000 rupees worth are yearly manufactured and sold, and in the latter from 30,000 to 40,000 rupees. These dhurrees or carpets are sold readily in all the bazaars around, and at all the neighbouring fairs, particularly at Berhampore, and Hurrier Chutter, or Sonapore; probably two-thirds of the whole quantity made are exported from the district, while the annual expenditure in the district will vary from 20,000 to 25,000 rupees worth per annum.

The dhurrees or carpets generally made for sale are the following:—

I.—6 yards long and 2 yards broad, thick and strong, of any colour, sold at from 6R. to 6R. 8A.

II.—A small kind used as quilts, or to spread in lieu of any other bedding on the ground. They weigh from 2 to 3 lbs. each, and are 1¼ to 1½ yards broad, by about 2 yards long: they sell at from 14A. to 1R. 8A. each, according to thickness and quality. (The specimen accompanying is 14A. only.)

III.—*Hauzhassica.*—This is the better kind of carpet,

NATIONAL ARCHIVES OF INDIA

and often displays much taste in the arrangement of the striped colours. It is made of any size to fit any room, and is always sold by weight. The price varies according to quality from 1R. 4A. to 1R. 12A. and sometimes as high as 2R. 4A. per seer. It is sold in all the fairs and in all the large cities around, such as Patna, Ghazeepore, Daodnuggur, Gyah, &c. No merchant's or banker's shop, or rich native's reception room, is complete without these being spread.

This is the kind generally used by Europeans for their drawing and public rooms.

IV.—Is a small kind of carpet made for use in zemindarree and other small cutcherries, and much used from its portability. It is from 3 to 4 yards long, and from 1½ to 2 yards broad, and sells at from 3R. to 4R. each carpet. It is generally made from five colours, from which cause it obtains the name of Dhurree Panch Rungha.

Any other description wanted are made, but these are the principal in use. The supply of these articles is only limited by the local demand. MR. BINGHAM thinks that Manchester might manufacture them with great advantage, and by copying and improving on the native patterns command a very large sale indeed. If Manchester would make these articles in long webs and in all widths and patterns, she would be certain to drive the native manufacture from the market to other trades, and command a valuable trade all over India for herself; while the superior stiffness, thickness, and quality of Manchester goods would, as in the matter of her calicoes and cotton, surely but slowly supersede the native manufacture altogether: but to do so, it is important to work from native patterns. The natives are a people of routine even in their carpets, and would not patronise sudden changes in the patterns and colours to which they had been used from childhood. But there yet exists abundant ground for superior work, and for Manchester to improve on the established native patterns, as Europeans (and they would probably consume one-third of the supply) would be glad to have some other than the monotonous stripes of native manufacture; and as other patterns come into use among them, they would slowly but surely find their way among the native population.

Gulleecha, or carpets.—These are only manufactured in Sasseeram, and are almost always woollen, of florid but neat patterns, in imitation of the Persian carpet. They are used to a considerable extent by the rich natives in their zenanas and by Europeans also. The size usually manufactured is 2 yards long by 1 yard broad, and they sell at from 2R. to 4R. 8A. per carpet. Any other sizes and patterns can be made according to order, and some of the patterns are extremely pretty.

The European carpet manufacturer could not compete with these as to price and actual value, as the wool costs but little in this country, and the native dies answer admirably for the purpose, while also the coarse local wools, which would not pay for exportation, answer for carpet work. The colours are harmonious, and I have but little doubt that it would pay any enterprising merchant to export these to Europe. The annual manufacture at present in Sasseeram is about 10,000 to 12,000R.

V.—Another kind, in imitation of the above, but wholly of cotton, is also made: prices nearly the same. The patterns are pretty, but they rapidly become spoiled by dirt and dust. They are invariably made of only two colours, blue and white.*

Division II.—MATTING OF HEMP, COCOA NUT FIBRE, STRAW REEDS AND GRASSES, FOR FLOORS OR WALLS.

In point of value the export of mats from India to this and other countries, as will be seen from the following Table, is not yet of great importance.

* R. W. BINGHAM, Esq.

TABLE SHOWING THE VALUE OF MATS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857-58 TO 1860-61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED						TOTAL EXPORTED TO ALL PARTS
		UNITED KINGDOM	FRANCE	AMERICA	CHINA	ARABIAN AND PERSIAN GULFS	OTHER PARTS	
		Value	Value	Value	Value	Value	Value	Value
		£	£	£	£	£	£	£
1857-58	Bengal	115	47	..	39	26	474	701
	Madras	7	..	..	..	3	707	717
	Bombay	..	5	..	..	23	130	158
	ALL INDIA	122	52	..	39	52	1,311	1,576
1858-59	Bengal	21	101	1,058	164	2	317	1,663
	Madras	4	..	..	..	25	697	726
	Bombay	..	..	..	..	10	106	116
	ALL INDIA	25	101	1,058	164	37	1,120	2,505
1859-60	Bengal	16	21	912	54	11	332	1,346
	Madras	23	..	..	..	3	568	594
	Bombay	5	..	..	..	18	416	439
	ALL INDIA	44	21	912	54	32	1,316	2,379
1860-61	Bengal	65	178	695	46	..	506	1,492
	Madras	11	..	..	..	..	524	535
	Bombay	25	..	..	..	18	24	67
	ALL INDIA	101	178	695	46	18	1,054	2,094

NATIONAL ARCHIVES OF INDIA

The internal trade in mats is, however, very extensive, as they are in universal use by both Europeans and natives, and are therefore made of kinds and varieties to suit everybody's taste and means. Europeans use only the better kinds of mats, and almost exclusively for the covering of floors in their houses; but natives employ them for a variety of other purposes, such as to sleep upon, smoke, &c. Every Mahomedan, however poor, after having performed the prescribed ablutions, spreads a small mat before him, while saying his prayers. The Hindoo uses it as a sort of table-cloth; in many a poor hut it constitutes the only piece of furniture perceptible.

Though mats are made in almost every part of India, the finest kinds are manufactured at Midnapore, near Calcutta. These are only manufactured to special order, but can be made of any size required. The piece varies according to the size of the border, which is coloured either red or black, and the large mat, No. 5143, 25 feet square, cost at Midnapore 30*l.* Smaller mats may be valued in proportion. But besides these extremely fine mats, a description is manufactured, of which considerable numbers are exported to Madras, Bombay, Mauritius, and South Australia; these are much cheaper, and a good strong mat, about 20 feet square, may be had for 4*l.* if plain, and 5*l.* 10*s.* with a black or red border. The mats next in point of fineness are those from Jessore, also in the vicinity of Calcutta, and called Sittulputtee; these, however, are never made, if Indian, of the size of an entire room-floor, but only in the shape of rugs, and have invariably a red border, sometimes also a red-flowered centre. They are generally made about 4 to 5 feet long, and 2 broad, and cost from 2*l.* to 3*l.* each. At Hooghly, near Calcutta, an inferior kind of small mat is made, of which very large quantities are exported by the emigrants to Mauritius and Demerara, and lately several shipments have been made to New South Wales. The largest variety of small mats is, however, made in the Madras Presidency; North Arcot, and the whole of the Malabar coast, are celebrated for these handsome fabrics. There are at least 200 varieties of design and colouring, the price varying from 3*s.* to 3*l.* per mat, according to quality and length. All mats in India are made by a special caste, who devote themselves exclusively to that description of manufacture. There are no statistical records to show the number and value of mats annually manufactured, but if it be considered that everybody, high or low, rich or poor, uses some kind of mat, it can easily be imagined that a very large number of people must be employed in making mats to supply the demand, not only of the immense local population, but also that for export.

MATS EXHIBITED.

5143. [2925] Large mat, Midnapore. H. B. COCKERELL, Esq.

This mat is made of the rushes exhibited under reeds and grasses, specimens of which have been exposed to the sun for three days; when about to be used they are soaked in water for an hour, and then split into thin strips, as shown in the specimen. It is made more or less fine, according to the quality of the mat required. If the border of the mat is to be coloured, the rushes are dipped into a red dye to the necessary depth. This process of manufacture consists in plaiting the rushes thus prepared on threads highly strung between two bamboos, a sley being used, as in weaving, for compressing them tightly together. The finest kind of mats take from one to six months to manufacture, both the time occupied and the cost depending on the size required. Small mats are much used by the natives, but of an inferior quality, and of much cheaper descriptions than those sent. Mats of this kind are exported largely to Calcutta. They can be made of any pattern. Price 300R.*

5144–8. [5415–19] Mushnud mats, Midnapore. GOVERNMENT of INDIA.

5149. [5420] Seetalputtee mat, Calcutta. R. D. TURNBULL, Esq.

5150. [5421] Seetalputtee mat, Jessore. BABOO RAMDHONE GHOSE.

5151–3. [5422–4] Mats, Hooghly. GOVERNMENT of INDIA.

Made from the Katee reed, at Mundul Ghât.

5154. [5897] Grass mat, 'Punch Kungee Mandra,' Nepaul. H.H. SIR JUNG BAHADOOR, K.C.B.

5155–61. [8311–7] Mats and matting, Malabar.

5162–88. [8319–45] Mats, Malabar.

Some of these mats (contributed by the GOVERNMENT of MADRAS) were manufactured at Pulghaut, Malabar; the others are of a similar character, but are contributions from the INDIA MUSEUM.

5189–95. [10529–35] Mats, North Arcot.

There are 63 mat weavers in Wandawash, six of whom are reported to be skilful workmen. The manufacture of this article is not carried on so largely as it used to be, owing to a series of unfavourable seasons. The reeds or grass of which these mats are made grow in Kasba Wandawash, on a kani of land, which is situated in the vicinity of a tank. They are also largely cultivated in Palle-Konda, Pondicherry, and Cuddalore in the South Arcot District, on river-banks or river Poramboke, &c. At Wandawash a kani of land would yield a produce of two bandy-loads of grass, if the season be favourable. The price of a bandy-load at Pallikonda is 30R., exclusive of the bandy hire thence to Wandawash, viz., 7R. or thereabouts. A superior kind of mat grass is to be had at Véláni, Tanjore District, but the charges are so heavy that they prohibit import.

5196. [4864] Screw pine matting, Madras. Dr. J. SHORTT.

5197. [4861] Rush mat, Madras. Dr. J. SHORTT.

5198. [10323] Mats of wild date leaf, Chota Nagpore.

Made all over the district, and in universal use among natives.*

5199. [6709] Coir mats, Singapore. COL. COLLYER.

5200. [6710] Rattan mat, Singapore. COL. COLLYER.

These mats were manufactured by prisoners at Singapore.

5201. [6335] Mats made of the leaf of the Pandong rush, Lubeck, on the Coast of Java. H.H. INCHE WAN ABOO BAKAR.

5202. [6361] Mats, Malacca. CHEE YAM CHEEN.

* H. B. COCKERELL, Esq.

* Local Committee, *Chota Nagpore.*

NATIONAL ARCHIVES OF INDIA

5203. [6414] Mats, Malacca. CHEE YAM CHUAN.

Made from palm leaves by Malay women.

5204-5. [9382-3] Large mats. Messrs. ROBINSON & Co., *London.*

A curious application of Ivory is exemplified by the mat next entered:—

5206. [5760] Mat made of ivory strips, Chittagong. H.H. the RAJAH of TIPPERAH.

CLASS XXIII.—WOVEN, SPUN, FELTED OR LAID FABRICS, WHEN SHOWN AS SPECIMENS OF PRINTING OR DYEING.

The various specimens exhibited under this head are not numerous, and, as a whole, unimportant.

5207. [5103] Cloth dyed with Koosum flowers, Cuttack.

Specimens of dyed cloths from Allahabad:

5208. [10331] 'Goolabee,' dyed with Koosoom.

5209. [10328] 'Soorkhee,' dyed with indigo.

5210. [10329] 'Peazee,' dyed with indigo.

5211. [10336] 'Peazee,' dyed with Koosoom.

5212. [10327] 'Kasnea,' dyed with Koosoom and indigo.

5213. [10334] 'Narungee,' dyed with a mixture of Koosoom.

5214. [10335] 'Baijanee,' dyed with Koosoom and indigo.

5215. [10330] 'Budawee,' dyed with Koosum and Hursinghar.

5216. [10325] Khuskhus colour, Koosum and a little indigo.

5217. [10326] 'Sonlay,' dyed with Koosum and Hursinghar.

5218. [10332] 'Goolanar,' a mixture of Koosum.

5219. [10333] 'Chumpyee,' a mixture of Koosum.

5220-2. [5557-9] Roomals, shown for dyeing, Ulwar. H.H. the RAJAH.

5223-4. [5245-6] Roomals, do. Do.

5225. [6520] Cloth dyed with Roam dye, Assam. W. E. WAGENTRIEBER, Esq.

5226. [5622] Specimens of dyeing produced in Nepaul. H.H. SIR JUNG BAHADOOR, K.C.B.

A paper-book, containing patterns of cloth, showing the various dyes produced in Nepaul.

About the authenticity of this production there exists some doubt. The only person who professes to be able to produce the colours is a dyer in the employ of MAHARAJAH SIR JUNG BAHADOOR, K.C.B., who states that the book (which contains many colours that he cannot reproduce) was the result of repeated mixtures in various proportions of two or more of the following dyes:—

1. Bukkum, or sappanwood (*Cæsalpinia sappan*).
2. Al (*Morinda citrifolia*).
3. Lac Dye.
4. Buhera (*Terminalia belerica*).
5. Hurra, Myrobalan nut (*Terminalia chebula*).
6. Koossoom, safflower (*Carthamus tinctorius*).
7. Huldee or turmeric (*Curcuma longa*).
8. Hursinghar, Weeping Nyctanthes (*Nyctanthes arbortristis*).
9. Nil, indigo.
10. Potash (*Butea frondosa*).
11. Khyr (*Mimosa catechu*).

Also blue vitriol; iron; Nepaul madder; lime; yellow ochres earth; and a preparation of the vetch called *Oord* or *Dolichos pilosus.*

5227-5243. [10547 10549-10562] Specimens of dyeing in various colours, North Arcot, Madras. VENKATA RAO & BAPANA RAO.

5244. [5544] Thrown silk, seven specimens of dyeing, Burmah.

5245. [4006] Kapila silk thread, Salem.

5246. [4007] Kiruvunga silk thread, Salem.

5247. [807] Red cotton cloth, Kutch. H.H. the RAO.

5248. [10548] Dyed cloth, North Arcot.

5249. [5105] Cloth dyed with *Cæsalpinia sappan*, Cuttack.

5250. [5106] Cloth dyed with Kamba goonda, Cuttack.

5251. [709] Cloth dyed yellow with pomegranate bark, Kutch.

NATIONAL ARCHIVES OF INDIA

5252. [978] Cloth dyed with indigo, Jhansee. SHUMSHERE, dyer.

5253. [9417] Series of cotton thread and cloth dyed of various colours, Madras.

5254. [9266] Patterns of English Madderpauts, dyed at Peethapoor, in the Mahee Kanta, expressly for the use of the Siamese.

The dyers are supplied with cloth by the Bombay merchants. Cost of dyeing, 1*d.* per yard.

5255. [9268] Patterns of Madderpaut prints, stamped at Wasna Zillee Baweesee in the Mahee Kanta.

The export of these to Siam is increasing, as is proved by the additional number of dyers employed within the last few years at Peethapore and Wasna.

5256. [979] Cloth dyed with Al, Jhansee. BALMOKUND, dyer.

5257. [10305] Four specimens of Saloo cloth, Banda. H.H. DASHWOOD, Esq.

This cloth is dyed with the Al-root, with a mixture of castor oil in the proportion of one *pâo* to every piece of cloth, each piece of cloth being eight yards. Besides castor oil, 'Russee,' a kind of earth, is also mixed, and goats' dung and alum. The cloth is first rubbed for ten days in the castor oil, 'Russee,' and goats' dung, and then dried in the sun. After ten days it is well washed and dried, and then steeped in the oil for five days; afterwards washed and dried in the sun, and after a third application of soap and water the cloth is ready for sale. The cost of dyeing different kinds of cloth is as follows:—

Dyeing Long cloth, 1¼A. per yard.
Ditto Nynsook cloth, 1A. per yard.
Ditto Mulmul cloth, ¾A. per yard.
Ditto Pugrees, ½A. per yard.

It is not easy to ascertain the extent and value of the quantity of saloo cloth annually manufactured. It is not confined to local consumption, but exported to other parts of India, and its use is general, and not limited to particular castes. The wholesale market value is about 1R. 6A. 6P. per piece, according to the quality of the cloth dyed.*

CLASS XXIV.—TAPESTRY, LACE, AND EMBROIDERY.

In the following arrangement of this important class, the Jury Directory has, as far as practicable, been complied with; the great variety of Indian articles of embroidery has, however, led to the adoption of the following classification or grouping:—

I.—TAPESTRY, COUNTERPANES, QUILTS, ETC.

5258–9. [1666–3803] Counterpanes, embroidered, Puttiala. H. H. the RAJAH.

5260. [5108] Counterpanes, Cuttack. GOVERNMENT of INDIA.

II.—ORNAMENTAL TAPESTRY OF SILK, WOOL, MOHAIR, LINEN, COTTON, AND OF THESE MATERIALS MINGLED TOGETHER, OR WITH METAL WIRES, WHETHER WOVEN IN THE LOOM OR OF ANY KIND OF NEEDLEWORK.

The only Indian manufactures answering to the above are the 'Kincobs,' or loom-made fabrics of silk and with gold and silver wire, which, although only employed in India as articles for personal wear, might be used in this country for covering chairs, couches, &c.

From BENARES.

5261. [3309] Kincob, *light blue, gold* and silver, Benares. MOHUN LALL.

5262. [3308] Kincob, *blue and gold,* Benares. MOHUN LALL and CHITTOO LALL.

5263. [3307] Kincob, white and gold, SILHUT CHUMDRABHAN.

5264. [3306] Kincob, dark blue, gold and silver. SILHUT CHUMDRABHAN.

5265. [13310] Kincob, gold and silver, DABEE PERSHAUD.

From AHMEDABAD. Exhibited by NUGGER SHET PREMABHAEE HEMABHAEE.

5266. [910] Kincob.

5267. [899] Kincob, green and gold.

5268–70. [896–8] Kincob, red and gold.

5271–2. [895, 950] Kincob, red and gold.

5273. [952] Kincob, green and gold.

From SURAT, BOMBAY.

5274. [1235] Kincob, Surat.

5275. [1229] Luppoo Rooperi, silver tissue.

5276. [1228] Luppoo Sooneri, tissue, red and gold.

* H. H. DASHWOOD, Esq.

NATIONAL ARCHIVES OF INDIA

5277. [1237] Kincob, red and gold.

5278. [1236] Kincob, green and gold.

5279. [1233] Kincob, green and gold.

5280. [1234] Kincob, blue and gold.

III.—LACE.

Manufactured at Mission Station, Edayangudi. Directress, MRS. CALDWELL.

5281. [10601] Lace, black, No. 130, 10 yds. Forwarded by the COLLECTOR OF TINNEVELLY.

5282. [10602] Lace, black, No. 132, 6 yds.

5283. [10603] Black lace veil border.

5284–7. [10604–7] Four black lace lappets.

5288. [10608] White lace veil border.

5289. [10609] White lace collar and sleeves.

5290. [10610] White lace collar and gauntlets.

5291. [10611] White lace Berthé No. 1.

5292. [10612] White lace Berthé No. 2.

5293. [10613] Lace, white, No. 5, 1R. per yard.

5294. [10614] Lace, white, No. 10, 4R. per yard.

5295–7. [10615–7] Three white lace collars.

5298. [10618] Lace insertion, at 14A. per yard, 16 yards.

5299–5302. [10619–22] Four lace lappets.

5303. [3995] Lace made by children in Missionary School, Nagracole, South Travancore. MRS. MACKINNON.

IV.—PLAIN EMBROIDERY, OR 'CHICKUN WORK.'

a. On tusser silk.

5304. [3558] Dresses, double skirt, 120R., Calcutta. SHAIK GOLAB. GOVERNMENT of INDIA.

5305. [3559] Dresses, double skirt, 80R., SHAIK GOLAB.

b. On net.

5306. [493] Dresses, tamboured, Madras. GOVERNMENT of MADRAS.

c. On muslin.

5307. [416] Two dresses, Madras. GOVERNMENT of MADRAS.

5308. [488] Two dresses, 12R. 8A. each, Madras. GOVERNMENT of MADRAS.

5309. [773] Dresses, Khyrpoor. H.H. MEER ALI MORAD.

From CALCUTTA. WORKED BY SHAIK GOLAB, EMBROIDERER, AND CONTRIBUTED BY THE GOVERNMENT of INDIA.

5310. [3553] Dress, 100R.

5311. [3554] Dress, two flounces, 80R.

5312. [3571] Dress, two flounces.

5313. [3572] Babe's robe, 20R.

5314. [3574] Dress bodies, 1R. 8A.

5315. [3583] Bernous, 40R.

5316. [3584] Bernous, 30R.

5317–20. [3579–82] Scarfs, 40R.

5321. [3556] Skirts, 8R.

5322–29. [3563–70] Petticoats, 8R.

5330–4. [3585–9] Collars and sleeves, 2R.

5335–6. [3643–4] Collars and cuffs, 3R. each.

5337-48. [3594–3605] Handkerchiefs, 12R.

5349-59. [3606–16] Handkerchiefs, 1R. 8A.

5360-1. [3618–9] Handkerchiefs, 8A.

5362. [3622] Handkerchiefs, 4A.

From DACCA.

5363. [1712] Handkerchiefs, on plain muslin, 20 yards, 50R. JUGGET CHUNDER DOSS.

5364. [3376] Two handkerchiefs, 30R. Do. GOVERNMENT of INDIA.

NATIONAL ARCHIVES OF INDIA

5365. [3378] Handkerchiefs on 'Charkana' muslin, 8R. GOVERNMENT of INDIA.

5366. [3398] Handkerchiefs, plain, 30R. HURMOHUN ROY.

5367. [3899] Two handkerchiefs, 25R. Do.

V.—GOLD AND SILVER EMBROIDERY.

a. Gold on silk.

5368. [2988] Shawls, 200R., Delhi. MANAK CHUND, exhibitor and manufacturer.

5369. [1725] Palungposhe, 153R., Agra. GOVERNMENT of INDIA.

5370. [3800] Choput or chesscloth, Umritsur. LALL CHUMBER MULL, exhibitor and manufacturer.

b. Gold on cashmere, merino, etc.

5371. [1694] Shawl, 175R., Dacca. JUGGET CHUNDER DOSS.

5372. [2983] Shawl, Delhi. MANAK CHUND.

5373. [2987] Shawl, Do. Do.

5374. [2999] Shawl, 200R., Do.

5375. [3000] Shawl, 200R., Delhi. GOVERNMENT of INDIA.

5376. [3304] Shawl, Benares. MOHUN LALL and CHITTOO LALL.

5377. [6252] Shawl, 110R., Delhi. MANAK CHUND.

5378. [2991] Cape, Delhi. MANAK CHUND.

5379. [3303] Doputtas, 400R. each, Benares. MOHUN LALL and CHITTOO LALL.

5380. [3305] Doputta, Do. Do.

5381. [1667] Scarfs, 100R., Dacca. HURMOHUN ROY.

5382. [1726] Scarfs, 95R., Benares. DABEE PERSHAUD.

5383. [1727] Scarf, 75R., Benares.

5384. [1728] Scarf, Do.

5385-8. [1731-4] Scarf 10R., Do.

5389. [1738] Scarf, 46R. Do.

5390. [1739] Scarf, 48R., Benares.

5391. [1748] Scarf, Do.

5392. [2989] Scarf, Delhi. MANAK CHUND.

5393. [3311] Scarf, Benares. MOHUN LALL and CHITTOO LALL.

5394. [3387] Three scarfs, 90R. each, Delhi. MANAK CHUND.

5395. [6251] Scarf, Delhi. MANAK CHUND.

5396. [6254] Scarf, 65R., Delhi. MANAK CHUND.

5397. [1735] Roomals, 175R., Benares. DABEE PERSHAUD.

5398. [1737] Roomals, 90R., Benares. DABEE PERSHAUD.

5399. [9413] Shawl. Messrs. FARMER & ROGERS, *London*.

c. Gold on muslin.

5400. [486] Dresses, with beetle wings, 200R., Madras. GOVERNMENT of MADRAS.

5401. [487] Dresses, black, 100R., Madras. GOVERNMENT of MADRAS.

5402-3. [2207-8] Two bottles of beetles' wings. 'Chenk Poorie,' and 'Thungon Poorie.' Kaladyne AKYAB.

Used for ornamental work and embroidery.

5404. [1714] Doputta, blue, 123R. 8A., Agra.

5405 [1719] Doputta, red, 67R. 8A., Agra. Do.

5406. [1720] Doputta, 123R. 8A., Agra.

5407. [1721] Doputta, 136R., Agra.

5408. [3802] Roomals, Puttiala. H.H. the MAHARAJAH.

5409. [631] Scarfs, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

5410. [1695] Scarfs, 60R. each, Dacca. JUGGET CHUNDER DOSS.

5410A. [1710] Scarfs, 60R. each, Dacca. JUGGET CHUNDER DOSS.

5410B. [3389] Five scarfs, 60R. each, Dacca. GOVERNMENT OF INDIA.

NATIONAL ARCHIVES OF INDIA

5411. [3395] 'Luchuck Kusseeda.' KHAJEH ABDOOL GUNNY.

5412. [1499] Handkerchief, Benares Jail. DR. N. H. CHEKE, Superintendent.

d. **Gold on cotton.**

5413-14. [1999–2000] Roomals (diaper pattern), Rampore. H.H. the NAWAB.

e. **Gold on net.**

5415. [485] Two dresses, with beetle wings, Madras. GOVERNMENT of MADRAS.

5416. [3403] Two shawls, 100R. each. Dacca. HURMOHUN ROY.

5417. [1715] Doputta, 92R., Agra. GOVERNMENT of INDIA.

5418. [1718] Doputta, green, 72R., Agra. GOVERNMENT of INDIA.

5419. [1698] Scarf, 55R., Dacca. JUGGET CHUNDER DOSS.

5420. [3385] Three scarfs, 60R., each, Dacca. GOVERNMENT of INDIA.

5421. [6255] Scarf, 30R., Delhi. MANAK CHUND.

f. **Gold and silver on muslin and net.**

5422. [1717] Doputta, sky blue, 52R. 8A., Agra. GOVERNMENT of INDIA.

5423. [1722] Doputta, 107R., Agra. GOVERNMENT of INDIA.

5424. [1723] Doputta, 153R., Agra. GOVERNMENT of INDIA.

g. **Gold lace.**

5425. [632] 'Danasary' border, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

5426. [633] 'Banjebund' do., Do. Do.

5427-8. [1230–1] Lace for trousers, Surat. GOVERNMENT of BOMBAY.

5429. [1226] Gold lace edging, Surat. Do.

5430–2. [954–6] Narrow gold lace, Ahmedabad. NUGGER SHET PREMABHAEE HEMABHAEE.

5433. [2196] Gold lace, ¾-inch, Patna.

5434. [1224] Gold lace, 2-inch, Surat.

5435–6. [545–45] Gold lace edging, Lahore.

5437. [5472] Gold lace, Lahore.

h. **Gold and silver lace.**

5438. [1100] Lace, Bombay. GOVERNMENT of BOMBAY.

5439. [1101] Lace, on red silk ground, Bombay. Do.

i. **Silver on cashmere or merino.**

5440. [1736] Shawl, Benares. DABEE PERSHAUD.

5441. [1729] Scarfs, 43R., Benares. DABEE PERSHAUD.

5442. [3388] Three scarfs, 70R. each, Dacca. GOVERNMENT of INDIA.

k. **Silver on muslin.**

5443. [1668] Dresses, 95R., Dacca. HURMOHUN ROY.

5444. [1716] Doputta, orange colour, 59R., Agra. GOVERNMENT of INDIA.

5445. [3390] Seven scarfs, 40R. each, Dacca. GOVERNMENT of INDIA.

l. **Silver on net.**

5446. [3404] Three shawls, 80R. each, Dacca. GOVERNMENT of INDIA.

5447. [3386] Three scarfs, 40R. each, Dacca. Do.

5448. [1669] Head-dress, 4R., Dacca. HURMOHUN ROY.

VI.—SILK EMBROIDERY.

a. **Silk on silk.**

5449. [704] Sachet, in coloured silks, Kutch. H. H. the RAO.

5450. [6332] Pillow-ends, Singapore. TAN KIM SING.

NATIONAL ARCHIVES OF INDIA

b. **Silk on cashmere or merino.**

5451–2. [1091–2] Shawls, 60R. each, Bombay. GOVERNMENT of BOMBAY.

5453. [2984] Shawls, 50R. Delhi. MANAK CHUND.

5454. [2990] Shawls, 50R., Delhi.

5455. [6268] Shawls 30R., Do.

5456. [2968] Capes, Do.

5457–9. [2969–71, 2996] Capes, Delhi. GOVERNMENT of INDIA.

5460–1. [1678–9] Capes, 7R. each, Dacca. HURMOHUN ROY.

5462. [1681] Capes, 7R., Dacca. HURMOHUN ROY.

5463–4. [1689–90] Capes, 3R. each, Do. Do.

5465–8. [2974–6–9] Capes, Delhi. MANAK CHUND.

5469–70. [2982, 2998] Capes, Delhi. GOVERNMENT of INDIA.

5471. [3380] Two capes, 40R. each, Dacca. GOVERNMENT of INDIA.

5472. [3381] Two capes, 35R. each. Do. Do.

5473–4. [6256–7] Capes, 30R. each, Delhi. MANAK CHUND.

5475–9. [6258–62] Capes, 10R. each. Do. Do.

5480. [6269] Cape. 30R. Do. Do.

c. **EMBROIDERIES ON VELVET AND CLOTH (not Cashmere).**

With the exception of the articles from Kutch, contributed by H.H. the RAO of KUTCH, the following specimens of embroidery are from Hyderabad, in Sinde.

5481. [1002] Table cover, scarlet and silver, 230R. 1A. 4P.

5482. [1007] Table cover, green and silk, 71R. 15A. 1P.

5483. [1001] Table cover, scarlet and gold, 230R. 1A. 4P.

5484. [1020] Chair cushion, green and silver, 29R. 3A. 9P.

5485. [1014] Cap piece, velvet, scarlet and gold, 11R. 13A.

5486. [1013] Two cap pieces, cloth, black and silver, 14R. 9A. 6P.

5487. [1003] Table cover, scarlet and silk, 77R. 1A. 4P.

5488. [1028] Apron, velvet, black and gold, 35R. 8A.

5489. [1018] Slippers, cloth, black and silver, 5R. 12A. 9P.

5490. [1029] Apron, velvet, black and gold, 35R. 8A.

5491. [1016] Two caps, green and silver, 13R. 0A. 6P.

5492. [1008] Table cover, scarlet and silk, 41R. 12A.

5493. [1017] Slippers, cloth, black, embroidered in gold and silver, 8R. 12A. 9P., Hyderabad.

5494. [1030] Apron, velvet, black, embroidered in silk, 17R. 8A.

5495. [1031] Bottle stands, scarlet velvet, gold embroidered, 10R. 7A. 6P.

5496. [1031A] Bottle stands, scarlet velvet and silver, 10R. 7A.

5497. [1006] Table cover, green, embroidered in silver and silk, 172R. 5A. 4P.

5498. [1012] Cushion, velvet, green and gold, 15R. 1A. 2P.

5499. [1027] Book cover, velvet, blue and gold, 19R. 1A. 4P.

5500. [1015] Cap piece, velvet, green, gold and silver, 13R. 0A. 6P.

5501. [1026] Chess cloth, velvet, scarlet and gold, 31R. 9A.

5502. [1032] Bottle stands, velvet, green, gold, and silver, 3R. 4A. 4P.

5503. [1031B] Bottle stands, velvet, scarlet, gold, and silver, 10R. 7A. 6P.

5504. [1009] Cushion, cloth, black silk and silver, 15R. 4A. 9P.

5505. [700] Apron, silk, embroidered in coloured silks, 36R. 15A. 2P. RAO of KUTCH.

5506. [5067] Table cover, cloth, embroidered in coloured silks. Sinde. BURZORJEE, SONS & Co.

NATIONAL ARCHIVES OF INDIA

5507. [5068] Table cover, cloth, embroidered in coloured silks. Sinde. BURZORJEE, SONS & Co.

5508. [1010] Cushion, green cloth, gold and silk, 16R. 0A. 7P., Hyderabad.

5509. [701] Apron, silk, embroidered in coloured silks, Do., 36R. 15A. 2P. RAO of KUTCH.

5510. [1005] Table cover, black cloth, and silk, 100R. 2A. 7P., Hyderabad.

5511. [710] Apron, black, embroidered in coloured silks, 179R. 10A. RAO of KUTCH.

5512. [703] Apron, silk, embroidered in coloured silks, 36R. 15A. 2P. Do.

5513. [1011] Cushion, velvet, violet, gold and silver, 17R. 7A. 1P., Hyderabad.

5514. [1023] Cushion, velvet, scarlet, gold and silk, 32R. Do.

5515. [1019] Cushion, cloth, black, gold and silver, 28R. 5A. 4P. Do.

d. Silk on muslin.

5516. [3391] Five shawls, 60R. each, Dacca. GOVERNMENT of INDIA.

5517. [1713] Scarfs, 'Jamdanee,' Dacca. HURMOHUN ROY.

5518. [3392] Two scarfs, 25R. each, Dacca. GOVERNMENT of INDIA.

e. Silk on net.

5519. [1711] Three dresses in ten pieces, 60R., Dacca. JUGGET CHUNDER DOSS.

5520–1. [2985–6] Shawls, 3*l*., Delhi. GOVERNMENT of INDIA.

5522. [1672] Shawl, 50R., Dacca. HURMOHUN ROY.

5523. [1692] Scarf, 4R., Do. Do.

5524. [3392] Two shawls, 25R. each, Dacca. GOVERNMENT of INDIA.

5525-6-7 [6270–1–2] Shawls, 12R., Delhi. MANAK CHUND.

5528. [713] Scarfs, 36R. 15A. 8P., Kutch. H.H. the RAO.

5529–33. [6263–7] Three scarfs, Delhi. MANAK CHUND.

5534. [6270] Scarfs, 12R., Do. Do.

5535. [6273] Scarfs, 35R., Do. Do.

5536. [2991] Mantles, Do. Do.

Beadwork.

5537. [3801] Choput or chess cloth, Umritsur. LALL CHUMBER MULL.

5538. [923] 'Churee,' bead-worked sceptre, Ahmedabad.

5539. [1505] Chess cloth, with beads, H.H. RAJAH of PUTTIALA.

5540. [924] 'Bajat,' bead ornament, Ahmedabad.

MISCELLANEOUS ARTICLES OF EMBROIDERY NOT INCLUDED AMONGST THE PRECEDING.

5541. [1189] Mat, green, gold embroidered, Benares. DABEE PERSHAUD.

5542. [1167] Bag, green, gold embroidered. Do. Do.

5543. [1170] Bag, blue, silver embroidered. Do. Do.

5544. [1183] Mat, gold embroidered. Do. Do.

5545 [1192] Mat, silver embroidered, Do. MOHUN LALL and CHITTOO LALL.

5546–7 [10053–54] Hand screens, Bareilly.

5548. [9443] Pair of Chindas or cap tops, Surat. BOMBAY GOVERNMENT.

5549. [2919] Fan, mounted in ivory, Chittagong. RAJAH of TIPPERAH.

5550. [5496] Pouches (2), Assam. LIEUT. W. PHAIRE.

5551. [1191] Mat, gold embroidered, Benares, MOHUN LALL and CHITTOO LALL.

5552. [1187] Mat, silver embroidered, Do. DABEE PERSHAUD.

5553. [5432] State parasol, embroidered, gold and silver handle, Moraon, Oude. H.H. the RAJAH GOREE SHUNKER.

NATIONAL ARCHIVES OF INDIA

5554–9. [1161–2–9–78–86–94] Bags and table mats, gold embroidered, Benares. DABEE PERSHAUD and SILHUT CHUNDRABHUN.

5560–2. [5507–9] Purses, gold embroidered, Lucknow. NAWAB-SHURF-OOD-DOWLAH.

5563. [1175] Table mat, gold and silver embroidered, Benares. DABEE PERSHAUD.

5564–5. [2361–4419] 'Gooldustahs' or golden trees, Do. LALLA BUNERAIN of LUCKNOW.

These ornaments, decorated with imitations of jewels and precious stones, are used at ceremonials and on state occasions as a kind of épergne.

5566. [2907] Necklace of honour, 'Har.' Lucknow. NAWAB SHURF-OOD-DOWLAH.

5567. [7829] Necklace of honour, Jaypore.

5568. [1172] Bag, silver embroidered, Benares. DABEE PERSHAUD.

5569. [1166] Bag, silver embroidered, Do.

5570. [919] Table cover, 'Chukur,' embroidered in gold and silver, Ahmedabad. NEKNAMDAR SUKAWATTEE SHETANEE HURKOOVURBHAEE.

5571–3 [1179–81] Table mats, gold embroidered, Benares. DABEE PERSHAUD.

5574–5 [1173–85] Table mats, gold embroidered, Do. Do.

5576. [1165] Bag, gold embroidered, Do. Do.

5577. [1174] Table mat, silver embroidered, Do. Do.

5578. [1193] Table mat, gold embroidered, Do. SILHUT CHUNDRABHUN.

5579. [1177] Table mat, gold embroidered, Do. DABEE PERSHAUD.

5580. [1164] Bag, gold embroidered, Do. SILHUT CHUNDRABHUN.

5581–2. [1182–4] Table mats, gold embroidered, Do. DABEE PERSHAUD.

5583. [1163] Bag, gold embroidered, Do. SILHUT CHUNDRABHUN.

5584. [1190] Table mat, gold embroidered, Do. MOHUN LALL and CHITTOO LALL.

5585. [976] Parasol, gold embroidered, Umritsur. GOVERNMENT of INDIA.

5586 [1168] Bag, silver embroidered, Benares. DABEE PERSHAUD.

5587. [1171] Bag, gold embroidered, Do. Do.

5588. [1176] Table mat, gold embroidered, Do. Do.

5589. [5537] Gold embroidered belt, set with pearls, emeralds and rubies, Nepaul. H.H. SIR JUNG BAHADOOR, K.C.B.

5590. [975] Large gold embroidered umbrella, Umritsur. GOVERNMENT of INDIA.

5591. [5450] Eight gold and crimson silk tassels, Lahore.

5592. [903] Gold lace edging, Keenaree, Ahmedabad.

5593. [928] 'Kothlee Kusbee,' gold embroidered purse, Ahmedabad. NEKNAMDAR SUKAWUTTEE SHETANEE HURKOOVURBHAEE.

5594. [929] 'Kothlee Kusbee,' silver embroidered, Do. Do.

5595. [2195] Gold thread, Patna.

5596. [4712] Saddle cloth, green velvet, embroidered in gold. SAWUNT WARREE.

5597. [902] Silver lace 'Gotta,' Ahmedabad.

5598. [904] Silver lace 'Keenaree,' Do.

5599. [5071] Mat, blue velvet, embroidered in gold and silver, Benares. RAJAH DEONARAIN SING.

This forms the stand for the Silver Vase, presented by Government to H.H. the RAJAH. (See No. 6669.)

5600. [1997] Rug, velvet, gold embroidered, Do.

5601. [2197] Silver thread, Patna.

NATIONAL ARCHIVES OF INDIA

5602. [925] Purse, or 'Wutwa,' embroidered with pearls, Ahmedabad. NUGGER SHETTAINE PREMABHAEE HEMABHAEE.

5603. [926] Purse, or 'Kothlee,' Do. Do.

5604. [922] Purse, or 'Wutwa,' Do. Do.

5605–9. [938–40–3] Keenarees of gold and silver lace, Do. NEKNAMDAR SHETANEE SUKAWUTTEE HURKOOVURBHAEE.

5610. [3767] Belts, gold embroidered, Umritsur. CHUMBER MULL.

5611. [1225] Silver lace, Surat. BOMBAY GOVERNMENT.

5612–14. [5451-3] Silk and gold lace bands, Lahore.

5615. [1223] Silver lace, Surat. BOMBAY GOVERNMENT.

5616–7. [5467–8] Gold thread, 'Kulla Buttoo,' Peshawur.

5618. [7830] Gold thread, or wire, Jeypore.

5619. [7831] Silver thread, Jeypore.

5620. [5473] Silver lace, Jeypore.

CLASS XXV.—SKINS, FUR, FEATHERS, AND HAIR.

The annual value of the feathers and hair exported from India, and each Presidency, will be seen by reference to the tables which follow:—

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF FEATHERS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED							TOTAL EXPORTED TO ALL PARTS	
		UNITED KINGDOM	FRANCE	OTHER PARTS OF EUROPE	CHINA		OTHER PARTS			
		Value	Value	Value	Quantity	Value	Quantity	Value	Quan.	Value
		£	£	£	Nos.	£	Nos.	£	Nos.	£
1857-58	Bengal	233	327	..	..	84	..	1,188	..	1,832
	Madras	9	..	..	..	..	..	3,712	..	3,721
	Bombay	..	..	..	..	..	..	..	..	..
	ALL INDIA	242	327	..	..	84	..	4,900*	..	5,553
1858-59	Bengal	164	121	6	..	295	..	949	..	1,535
	Madras	..	..	..	..	..	200,226	2,663	200,226	2,663
	Bombay	..	..	..	..	..	..	..	..	..
	ALL INDIA	164	121	6	..	295	..	3,612*	..	4,198
1859-60	Bengal	290	629	7	..	958	..	2,190	..	4,074
	Madras	..	..	..	31,231	814	187,952	4,715	219,183	5,529
	Bombay	..	..	..	..	..	..	..	..	..
	ALL INDIA	290	629	7	..	1,772	..	6,905*	..	9,603
1860-61	Bengal	163	880	1	..	2,517	..	2,451	..	5,012
	Madras	..	..	..	13,357	293	134,675	2,911	148,032	3,204
	Bombay	..	..	..	..	..	..	..	..	..
	ALL INDIA	163	880	1	..	2,810	..	5,362*	..	8,216

* The greater part of this was exported to Ceylon and the Straits Settlements.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF HAIR EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		America		Arabian and Persian Gulfs		Other Parts		Total Exported to all Parts		
		Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quan.	Value	Quantity		Value
		cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1857–58	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	5,402	2,701	86	43	..	..	..	..	..	..	5,488	274	2,744
	All India	5,402	2,701	86	43	..	..	..	..	..	..	5,488	274	2,744
1858–59	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	4,298	2,149	..	..	..	..	159	79	52	26	4,509	225	2,254
	All India	4,298	2,149	..	..	..	..	159	79	52	26	4,509	225	2,254
1859–60	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	4,566	2,398	..	..	78	39	31	15	271	136	4,946	247	2,588
	All India	4,566	2,398	..	..	78	39	31	15	271	136	4,946	247	2,588
1860–61	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	..	..	..	..	..	..	..	..	..	..	..	..	..
	Bombay	3,409	1,705	..	..	..	..	169	84	238	89	3,816	191	1,878
	All India	3,409	1,705	..	..	..	..	169	84	238	89	3,816	191	1,878

Section A.—Skins and Furs.

5621–2. [8171, 8171A] Two Bengal tigers, mounted in glazed cases, shot in the Deyra Doon, March 1860. Col. Charles Reid, C.B.

5623. [2348*] Skin of the domestic yâk, Darjeeling. Dr. A. Campbell.

5624. [2346*] Skin of the 'Dung,' or wild yâk, Darjeeling. Dr. A. Campbell.

Of manufactures from skins from which the hair has not been removed, a few specimens of the coats and cloaks in common use in Upper India and Sinde during the cold season have been forwarded from Lahore and Shikarpore, and also from Darjeeling, by Dr. Campbell.

Section B.—Feathers and Feather Work.

From Calcutta. Government of India.

5625. [3334] Feather plumes.

5626–7. [3335–6] Muffs and boas.

5628–9. [3337–8] Muffs and victorines.

5630. [3339] Muff and boa.

5631. [3340] Muff, boa, and victorine.

5632–3. [3341–2] Twelve boas.

5634. [3343] Six victorines, children's.

5635. [3344] Six cuffs.

5636. [3345] Six powder puffs.

5637–55. [3346–64] Feather plumes.

5656. [627] A plume of Bulbul feathers, Madras, Rajah of Vizianagram.

5657. [5662] Pair peacocks' feather fans, Calcutta. A. M. Dowleans, Esq.

5658. [5661] Three peacocks' feather fans. A. M. Dowleans, Esq.

5659. [3154] Two do., Hooghly. A. M. Dowleans, Esq.

5660. [4713] Pair fans, bordered with peacocks' feathers. Sawunt Warree. Government of Bombay.

From Nepaul, Sir Jung Bahadoor, K.C.B.

5661. [2925] Peacocks' feather fan, silver handle.

5662–3. [5929–30] Peacocks' feather baskets.

5664. [5429] Peacocks' feather umbrella.

5665–6. [5430–31] Peacocks' feather fly flapper.

5667. [5785] Peacocks' feathers, Assam. Col. Vetch.

5667A. [3738] Kingfishers' feathers, Pegu.

5667B. [3739] Marabout feathers, Rangoon.

NATIONAL ARCHIVES OF INDIA

CLASS XXVI.—LEATHER, INCLUDING SADDLERY AND HARNESS.

As chiefly connected with this class a Table, indicating the extent to which Hides and Skins now form an article of export from India, is here introduced. (p. 238.)

Section A.—LEATHER AND ARTICLES CHIEFLY MADE FROM LEATHER.

5668. [5933] Chamois leather, Nepaul. H.H. SIR JUNG BAHADOOR, K.C.B.

5669. [5934] Coloured leather, Nepaul. H.H. SIR JUNG BAHADOOR, K.C.B.

5670. [2961] 'Kimmookht,' Bareilly.

A kind of prepared leather which looks like 'shagreen.' Is used for making native shoes, and also for sword scabbards. About 2,000R. worth is annually exported from Bareilly to Delhi, and other places.

5671. [8101] Red leather sheepskin, cost 50R. per 100, Cawnpore.

5672. [8102] Buffalo leather, cost 10R. per maund of 40 lbs., Cawnpore.

5673. [8103] Cowhide, Cawnpore.

5674. [8104] Red goat leather, cost 62R. 8A. per 100 lbs., Cawnpore.

Section B.—SADDLERY, HARNESS, ETC.

5675. [6488] Set of buggy harness, Cawnpore. LUCHMEE PERSHAD.

5676. [6489] Set of artillery harness for one horse, Cawnpore. GOVERNMENT of INDIA.

The staple manufacture of Cawnpore is leather. There are about fifty tanneries, each of which turns out on an average 1,200 hides a year, or 60,000 hides yearly on the whole. The average value of a hide tanned by the native process being about 4R., the total annual value of the out-turn of tanned hides is 240,000R. Besides the hides tanned in Cawnpore itself, about 180,000 hides are imported yearly, which are tanned either at Meerut or in the adjacent villages of the Cawnpore district. Those from Meerut are said to be of superior quality: the village hides, on the other hand, are inferior to those tanned in Cawnpore, and are mostly taken from cattle which have died of disease. The total number of hides used yearly at Cawnpore is thus about 240,000, and their value 960,000R. In addition to the tanning trade there is an extensive business done at Cawnpore in the manufacture of saddlery, harness, boots, shoes, and other leathern articles: there are 52 saddlers and 55 shoemakers firms, which make up goods for the European market, and about 200 shops which supply the native market—the latter deal chiefly in shoes made in the native fashion. The value of the shoes made for the native market is about 40,000R. annually. Leathern articles made at Cawnpore are exported to Meerut, Benares, Central India, and Rohilkund, whence they find their way extensively to other parts of India. The places above-named carry on a direct trade with Cawnpore. There is no export trade to Europe or America. There can be no doubt that the quality of the leather produced by the native process is decidedly inferior. The native tanner does not leave his hides to soak in the pits containing his bark infusion, but, having sewed up a quantity of bark in the skin (made into a kind of bag) he exposes it to a constant stream of water, which forces the astringent matter into the pores of the hide very rapidly: but to make the process still more rapid the hide is taken out, wrung, and refilled every four or five days. A hide can be ready in this way in about a month, but the leather is less strong, durable, and pliable than English leather. The currying process also is often entirely omitted, and when performed it is generally on a minute scale, and very inefficiently. The only attempt hitherto made to introduce the English process is being conducted on the part of Government by CAPT. STEWART, Commissary of Ordnance.

The English system of tanning is more costly than the native. This circumstance would be a bar to the introduction of English tanned leather into the native market, where cheapness is the first requisite. But for the supply of Government contracts, and for the articles used by the European community in India, there is no question that Cawnpore could be made to afford ample quantities of leather and leathern articles at comparatively moderate prices. As it is, the articles supplied to Government and to private purchasers are hardly inferior to those manufactured in England, except in the quality of the leather and other materials. The workmanship is very little worse than that of an average English artisan. I should think, therefore, that improvement in the quality of Cawnpore leather might be expected to lead to a considerable increase in its consumption in India. As regards the European market, it is true that Indian hides cannot compete in quality with the hides of well bred and fed English cattle; but then the hides of English cattle do not supply the whole of the English market. There is already a considerable trade in raw hides between India and England, and it seems not unlikely that if a better process of tanning were established, tanned hides might be exported to England with economy. It is to be remarked that Cawnpore does not appear to be in a position of exceptional natural advantage as regards the leather trade. The circumstances which made it an emporium of this trade appear to be—first, that a great part of the population of the old town of Cawnpore were chumars (shoemakers); next, that under our Government Cawnpore became a considerable military and civil station.

Babool bark is almost exclusively used by the natives for tanning purposes; it is the only bark that can be procured in large quantities and cheap. Price from ½ to 2 rupees per maund.

In the Government experiments now being promoted, various barks are being used. That of the *Cassia fistula*, or native Amultas, is found to contain a good quantity of tannin, but it is rare in these provinces.

The *Acacia obtusifolia*, or Native Chakoor, is more plentiful—but still not sufficiently so for manufacture on anything but a small scale.

The leaves and small shoots of the native 'Aura,' supposed to be one of the *Terminalia* species, have also been used. It has properties somewhat similar to the American sumach. The leaves of this 'Aura' have been known to be useful in tanning for some years; but the natives have not used it, owing to the difficulty of finding it in large quantities. It gives to leather a light colour.*

* Local Committee, *Cawnpore.*

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF HIDES AND SKINS EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1851-52 TO 1860-61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe		America		China		Arabian and Persian Gulfs		Other Places		Total Exported to all Parts	
		Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quan.	Value	Quan.	Value	Quantity	Value	Quantity	Value
		Pieces and No.	£	Pieces and No.	£	Pieces and No.	£	Pieces and No.	£	No.	£	No.	£	Pieces and No.	£	Pieces and No.	£
1851-52	Bengal	Pcs. 1,869,936	165,134	..	..	..	..	..	..	..	..	..	..	Pcs. 966,629	111,071	Pcs. 2,836,565	276,205
	Madras	No. 762,734	15,009	..	..	..	..	..	..	..	..	..	..	No. 279,956	6,314	No. 1,042,690	21,323
	Bombay	..	5,550	..	..	..	..	..	..	..	..	..	..	..	11	..	5,561
	All India	..	185,693	..	..	..	..	..	..	..	..	..	..	..	117,396	..	303,089
1852-53	Bengal	Pcs. 2,050,232	196,613	Pcs. 202,724	14,956	Pcs. 182,353	17,337	Pcs. 1,431,562	92,939	..	..	..	..	Pcs. 170	37	Pcs. 3,867,041	321,882
	Madras	No. 439,064	7,951	No. 5,960	68	..	..	..	..	3,500	39	4,817	260	No. 490,543	1,371	No. 943,884	9,689
	Bombay	..	6,153	..	..	..	..	..	..	..	..	..	103	..	22	..	6,278
	All India	..	210,717	..	15,024	..	17,337	..	92,939	..	39	..	363	..	1,430	..	337,849
1853-54	Bengal	..	215,128	..	9,492	..	8,217	..	141,418	..	..	..	..	..	1,303	..	375,558
	Madras	No. 740,594	17,080	No. 3,648	86	No. 615	6	..	..	..	..	12,459	740	No. 78,631	687	No. 835,947	18,599
	Bombay	..	8,045	..	..	..	..	..	..	..	..	..	92	..	71	..	8,208
	All India	..	240,253	..	9,578	..	8,223	..	141,418	..	..	..	832	..	2,061	..	402,365
1854-55	Bengal	..	173,639	..	15,446	..	7,577	..	156,754	..	1,585	..	54	..	766	..	355,821
	Madras	No. 781,995	29,282	No. 44,961	1,663	..	..	..	..	..	..	30,192	1,848	No. 181,769	2,300	No. 1,038,917	35,091
	Bombay	..	8,698	..	..	..	2,238	..	..	..	..	..	504	..	34	..	11,474
	All India	..	211,619	..	17,109	..	9,815	..	156,754	..	1,585	..	2,406	..	3,100	..	402,386
1855-56	Bengal	..	220,273	..	26,959	..	12,468	..	111,286	..	167	..	..	..	1,095	..	372,248
	Madras	No. 1,170,390	40,806	No. 47,808	2,132	No. 6,720	67	No. 56,500	1,646	..	..	8,338	482	No. 232,205	2,354	No. 1,451,961	47,487
	Bombay	..	10,512	..	..	..	1,254	..	..	..	..	..	94	..	134	..	11,994
	All India	..	271,591	..	29,091	..	13,789	..	112,932	..	167	..	576	..	3,583	..	431,729
1856-57	Bengal	..	252,742	..	44,506	..	32,737	..	167,038	..	388	..	..	..	524	..	497,935
	Madras	No. 1,320,213	56,612	No. 59,061	3,197	No. 30,932	1,901	No. 3,000	105	..	..	21	1	No. 24,402	602	No. 1,437,629	62,418
	Bombay	..	11,899	..	..	..	193	..	..	..	..	..	85	..	..	..	12,177
	All India	..	321,253	..	47,703	..	34,831	..	167,143	..	388	..	86	..	1,126	..	572,530
1857-58	Bengal	..	235,879	..	44,918	..	28,552	..	138,733	..	155	..	..	..	953	..	449,190
	Madras	No. 2,084,824	113,760	No. 267,155	21,452	No. 46,550	1,954	..	..	..	..	2,236	134	No. 173,250	4,164	No. 2,574,015	141,464
	Bombay	..	41,521	..	3,912	..	2,794	..	676	..	..	..	57	..	88	..	49,048
	All India	..	391,160	..	70,282	..	33,300	..	139,409	..	155	..	191	..	5,205	..	639,702
1858-59	Bengal	..	206,419	..	32,314	..	36	..	145,448	..	2	..	..	..	1,700	..	385,919
	Madras	No. 2,558,537	96,373	No. 68,380	3,476	..	..	..	..	1,500	16	2,005	120	No. 240,493	3,678	No. 2,870,915	103,663
	Bombay	..	53,085	..	940	..	..	..	689	..	..	..	246	..	138	..	55,098
	All India	..	355,877	..	36,730	..	36	..	146,137	..	18	..	366	..	5,516	..	544,680
1859-60	Bengal	..	199,067	..	7,955	..	12,574	..	86,138	..	..	..	841	..	3,230	..	309,805
	Madras	No. 3,008,617	100,592	No. 21,900	1,551	..	..	..	..	..	..	675	39	No. 63,207	1,189	No. 3,094,399	103,371
	Bombay	..	29,091	..	441	..	..	..	1,685	..	..	..	64	..	82	..	31,361
	All India	..	328,750	..	9,947	..	12,574	..	87,823	..	..	..	944	..	4,501	..	444,537
1860-61	Bengal	..	307,257	..	30,347	..	..	..	141,060	..	66	..	..	..	27,084	..	505,814
	Madras	No. 2,824,303	118,257	No. 31,968	2,148	..	..	..	..	640	13	6,781	403	No. 101,485	2,511	No. 2,965,177	123,332
	Bombay	..	20,320	..	24	..	..	..	5,444	..	..	..	1,506	..	189	..	27,483
	All India	..	445,834	..	32,519	..	..	..	146,504	..	79	..	1,909	..	29,784	..	656,629

NATIONAL ARCHIVES OF INDIA

5677. [1459] 'Charjaweh' saddle, bridle, &c., embroidered in gold, Puttiala. H.H. the MAHARAJAH.

5678. [1460] 'Kathee' saddle, bridle, &c., embroidered in gold, Puttiala. H.H. the MAHARAJAH.

5679. [736] Sinde saddle, silver mounted, Khyrpoor. H.H. MEER ALI MOORAD.

5680. [734] Embroidered saddle cloth, Khyrpoor. H.H. MEER ALI MOORAD.

5681. [740] Camel saddle, complete. Khyrpoor. H.H. MEER ALI MOORAD.

5682. [4261] Saddle cloth, Thibet, DR. CAMPBELL.

5683–4. [10057-8] Whips, Futtehpore, GOVERNMENT of INDIA.

CLASS XXVII.—ARTICLES OF CLOTHING.

The vast proportion of what may be called articles of clothing in India being in the form of *loom-made* scarfs of various descriptions, the following arrangement and classification have been adopted with the view of indicating not only the nature of the materials so employed, but also the manner in which variety of pattern is secured by the introduction of silk or of gold and silver thread into the borders and ends of even ordinary cotton fabrics.* By this means an attractive garment is produced, and it is only by attention to such points that the manufacturer will be enabled to fully suit the tastes of the people, and thus extend the market for his goods.

Case 26 (see plan) contains one out of twenty sets of pattern books which have, with the view of affording facilities for this purpose, been prepared for presentation to the chief seats of commerce in this country. Each set is identical with the one exhibited, and comprehends upwards of 600 'working samples' illustrative of not only the articles of Indian clothing in the scarf-form made in the loom, but also specimens of the cotton and silk piece goods, woollens, and other textile manufactures of the country.†

The same case likewise contains a book forwarded by the LAHORE CENTRAL COMMITTEE, showing samples of the cotton cloths commonly worn in the Punjab.

Section I.—ARTICLES OF MALE ATTIRE (NATIVE).

A. COVERINGS FOR HEAD.

I.—TURBAN PIECES.

a. **Cotton.**

5685. [873] Turban piece, Ahmedabad. GOVERNMENT of BOMBAY.

5686. [875] Turban piece, Ahmedabad. GOVERNMENT of BOMBAY.

5687. [1159] Red, Belgaum. GOVERNMENT of BOMBAY.

5688. [1294] Moondasa (kind worn by the poorer classes), 1R. 4A., Dharwar. W. C. ANDERSON, Esq.

5689. [1295] Moondasa, 12A., Dharwar. W. C. ANDERSON, Esq.

5690. [1285] Roomal (for cultivators' wear), 13A., Dharwar. W. C. ANDERSON, Esq.

Wrapped round the head, when in the fields.

b. **Cotton with silver thread in ends.**

5691. [1296] Moondasa, 3R. 2A., Dharwar. W. C. ANDERSON, Esq.

Worn by poorer classes on festival days.

* Some of the fabrics which, for the above-named reason, have been introduced into this class, are included in the 'Official Industrial Catalogue' under the head of embroideries, and as such were submitted by me to the Jury of Class XXIV. The arrangement here adopted is not, therefore, intended as a guide to the classification of such goods of the same description as may on a future occasion be contributed from India—the position of these having to be determined with reference to the kind of work or manufacture which a particular article may most aptly illustrate—a point which has to be carefully decided before exposition.

† It is expected that these pattern books will be ready for distribution at an early date. It is intended at the same time to publish a paper on the 'Textile Manufactures of India,' with illustrations showing the different ways in which the various fabrics are worn as well as made up by the Indian consumer.

NATIONAL ARCHIVES OF INDIA

c. **Cotton with gold thread in ends.**

5692. [1269] Turban piece, Rewa Kanta. GOVERNMENT of BOMBAY.

d. **Cotton and gold.**

5693. [707] 'Mundel,' 8R. 4A. 11P., Kutch. H.H. the RAO.

5694. [901] Turban piece, Ahmedabad. GOVERNMENT of BOMBAY.

5695–6. [1740–1] Black muslin, Benares. GOVERNMENT of INDIA.

5697. [1742] Red and gold, 40R., Benares. GOVERNMENT of INDIA.

e. **Cotton and silk—gold printed.**

5698–5709. [7817–28] (12) Jeypore. H.H. the RAJAH.

f. **Silk.**

5710–13. [1200–3] Turban piece, Puttiala. H.H. the MAHARAJAH.

5714. [2885] (Child's), Poonah, GOVERNMENT of BOMBAY.

5715. [3545] Crimson, Umritsur. GOVERNMENT of INDIA.

5716. [5463] From Peshawur. FUZL AHMUD.

g. **Silk with gold thread in ends.**

From PUTTIALA. H.H. the MAHARAJAH.

5717. [1204] Yellow.

5718. [1205] Buff (2).

5719. [1206] Shot.

From LAHORE. GOVERNMENT of INDIA.

5720–2. [5443–5] Grey.

5723. [5446] White.

5724. [5447] Crimson.

5725. [5448] Grey.

5726. [5449] Shot.

5727. [5464] Shot, Peshawur. GOVERNMENT of INDIA.

h. **Silk, gold embroidered throughout.**

5728. [3543] Yellow, Umritsur. GOVERNMENT OF INDIA.

5729. (3544) Red, Umritsur. GOVERNMENT OF INDIA.

II.—HATS, CAPS, ETC.

Topees or native hats, embroidered.

5730. [1097] Topee, Bombay. GOVERNMENT of BOMBAY.

5731–2 [5510–11] Topees, Lucknow, Oude, RAJAH TAJ KISHEN.

5733. [5512] Topee, Maraon, Oude. H.H. RAJAH GOREE SHUNKER.

5734. [5516] Topee, Lucknow, Oude, NAWAB SHURFOOD DOWLAH.

5735 [5517] Topee, Ulwar. H.H. the MAHARAJAH.

Caps, embroidered.

5736–39. [5513–5, 5518] Cap, Maraon, Oude. H.H. RAJAH GOREE SHUNKER.

5740. [3782] Cap, Peshawur. GOVERNMENT of INDIA.

5741–44. [5476–9] Four caps, Peshawur. GOVERNMENT of INDIA.

5745–7. [5480–2] Three caps, Peshawur. GOVERNMENT of INDIA.

5748. [3783] Cap, Benares. GOVERNMENT of INDIA.

5749–50. [5474–5] Caps, Lahore. GOVERNMENT of INDIA.

5751. [9330] Caps, Cuttack. GOVERNMENT of INDIA.

5752. [1095] Caps, Bombay. GOVERNMENT of BOMBAY.

5753–4. [783–4] Two Sindee caps, Khyrpoor. H.H. MEER ALI MOORAD.

5755–7. [831-42-44] Caps, Shikarpoor. GOVERNMENT of BOMBAY, per Collector of Shikarpoor.

5758. [1757] Woollen 'felt,' cap, Darjeeling. DR. CAMPBELL.

5759-61. [1760–62] Four felt caps. DR. CAMPBELL.

NATIONAL ARCHIVES OF INDIA

5762. [706] Silk cap, Kutch. H.H. the RAO.

5763. [1758] Cap, Darjeeling. DR. CAMPBELL.

5764–6. [5460–2] Parandas, or hair ornaments of silk, Lahore. GOVERNMENT of INDIA.

B.—CLOTHING FOR UPPER PORTION OF BODY, SHOULDERS, ETC. (Loom made.)

I.—LOONGEES OR SCARFS, WORN BY MALES.

a. Cotton.

5767–8. [722–28] Loongees, Kutch. H.H. the RAO.

5769. [729] 'Dhawood khani,' 1R. 7A., Kutch, H.H. the RAO.

5770. [605] Loongee, Madras. GOVERNMENT of MADRAS.

5771–2. [726–32] Loongees, Kutch. H.H. the RAO.

5773–4. [5244, 5554] 'Patsos,' Burmah, GOVERNMENT of INDIA.

These are the ordinary dresses of the poorer classes of Burmah and Pegu.*

5775. [1297] 'Selya,' sheet or body covering, Dharwar. W. C. ANDERSON, Esq.

Used by the lower classes; always presented to the bridegroom by relations of the bride, together with a turban. Price 1R. 12A.

5776. [1280] 'Selya,' Dharwar. W. C. ANDERSON, Esq.

Worn commonly by cultivators and labourers, wrapped round their shoulders and body, when employed in the fields. Price 1R. 4A.

5777. [1281] 'Selya,' Dharwar. W. C. ANDERSON, Esq.

Another description of the same kind of cloth. Price 1R. 4A.

b. Cotton with silk borders and ends.

5778. [884] Loongee, Ahmedabad, 1R. 6A. GOVERNMENT.

5779–80. [8244–5] Loongees, Bhawulpore, H.H. the NAWAB.

5781–2. [8283–4] Loongee, Peshawur. GOVERNMENT of INDIA.

5783–4. [10004–5–7] 'Phalkarees,' Lahore. NAWAB of FAREEDKOTE.

5786–8. [607–9] Loongee, Madras. GOVERNMENT of MADRAS.

5789. [1137] Loongee, Belgaum. GOVERNMENT of BOMBAY.

5790–1. [2611–2] Loongee, Bangalore, Mysore. GOVERNMENT of MYSORE.

5792. [2618] Loongee, Chittledroog, Mysore. GOVERNMENT of MYSORE.

5793. [1317] Scarf, Dharwar. W. C. ANDERSON, Esq.

Used by cultivators on festivals, wrapped around the shoulders, and worn by Brahmins around the waist and loins. Piece of two, 11R. 2A.

5794. [1324] 'Buchkane,' Dharwar. W. C. ANDERSON, Esq.

Worn round the shoulders and body by male children of cultivators on holidays, also wrapped around the waist of images of gods. Piece containing two, 5R. 2A.

c. Silk and cotton mixed.

5795. [717] Silk and cotton Loongee, Kutch. H.H. the RAO.

5796. [5553] 'Potsan Patso,' Akyab. GOVERNMENT of INDIA.

Worn by the Mugs of the province. 1 piece, 24R.; made in Akyab; more of the same description of cloth is manufactured at Cox Bazaar, Chittagong.*

d. Silk and cotton with silk borders and ends.

5797–8. [8246–9] From Bhawulpore. H.H. the NAWAB.

The workmanship of SADIGE and OLA BUKSH, of *Khairpore.*

5799–5802. [8285–88–92–97] Loongees, Peshawur. GOVERNMENT of INDIA.

e. Cotton with silk and gold in borders and ends.

5805. [2598] Loongee, Bangalore, Mysore. GOVERNMENT of MYSORE.

f. Cotton, gold embroidered.

5806. [5193] Loongee, Goojerat Jail. GOVERNMENT.

* Local Committee, *Rangoon.*

* Local Committee, *Akyab.*

NATIONAL ARCHIVES OF INDIA

g. **Silk.**

5807. [2619] Loongee, Chittledroog, Mysore. GOVERNMENT.

5808. [8238] Loongee, Luckimpore. H. L. MICHEL, Esq.

h. **Silk, with gold in borders and ends.**

5809. [1743] Green and red double woven Loongee, Benares. GOVERNMENT.

5810. [3761] Red, Umritsur. GOVERNMENT.

5811-3 [3762-4] Crimson checked, Umritsur. GOVERNMENT.

5814. [5286] Figured silk, Bhawulpore. H.H. the NAWAB.

Worked by NATTOO PATOLI.

5815. [5287] Figured silk, Bhawulpore. H.H. the NAWAB.

The workmanship of SADIGE and OLA BUKSH of *Khanpore.*

5816. [6500] Purple, Lahore. H.H. the NAWAB of FAREEDKOTE.

5817. [10002] Green, Lahore, H.H. the NAWAB of FAREEDKOTE.

5818. [3765] 'Khess,' Umritsur. GOVERNMENT of INDIA.

5819. [8242] 'Khess,' scarlet, Mooltan. LAHORE COMMITTEE.

5820. [8243] 'Khess,' green, Mooltan. LAHORE COMMITTEE.

5821. [3766] 'Khess,' crimson, Mooltan. LAHORE COMMITTEE.

5822-3. [8239-40] Loongee, Assam. MAJOR H. S. BIVAR.

C.—UPPER CLOTHING MADE INTO COATS, JACKETS, ETC.

I.—CHOGAS, NATIVE COATS, JACKETS, WAISTCOATS, ETC.

a. **Cotton.**

5824. [635] Woven Choga, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

b. **Cotton, embroidered with silk.**

5825. [5563] Piplee work, Cuttack. GOVERNMENT of INDIA.

c. **Cotton and silk.**

5826. [4471] 'Tyndine,' worn by Karens, Burmah. Messrs. HALLIDAY, FOX & Co.

d. **Woollen, gold embroidered.**

5827. [847] Choga, Shikarpoor. GOVERNMENT.

e. **Silk, embroidered.**

5828. [712] 'Jama,' Kutch. H.H. the RAO.

5829. [5757] Choga, Meerut. KOOER WUZEER ALI KHAN.

f. **Leather, embroidered with silk.**

5830. [10329] Jacket, Peshawur. GOVERNMENT.

5831. [828] Two gold embroidered woollen 'Neemchas,' scarlet, Khorassan, Shikarpoor. GOVERNMENT of BOMBAY.

5832. [829] Two gold embroidered woollen waistcoats, red, Shikarpoor. GOVERNMENT of BOMBAY.

D.—COVERINGS FOR LOINS AND LOWER PORTIONS OF BODY. (Loom made).

I.—DHOTEES.

Waist and loin cloths: occasionally worn so as to fall over and cover the greater portion of the lower limbs.

a. **Cotton.**

5833. [1282] Dhotee, Dharwar. W. C. ANDERSON, Esq.

Commonly worn by cultivators and labourers in the field. Piece contains four; price 1R. 14A. each.

5834. [1283] Buchkhanee. Dharwar.

Commonly worn as a waist cloth by children of respectable people; also worn by adults of the same class, while sleeping. Price, 1R. 2A.

5835. [1284] Punjee. Dharwar.

Cloth used by well-to-do people, to dry themselves after bathing, and also worn as a waist cloth by poor people. Piece contains four. Price, 1R.

NATIONAL ARCHIVES OF INDIA

b. **Cotton, plain centre with coloured borders and ends.**

5836. [720] 'Dhotee, Kutch, 1R. 10A. 1P. H.H. the RAO.

5837–8. [857–860] Dhotees, Ahmedabad. GOVERNMENT of BOMBAY.

5839–40. [8267–8] Dhotees, Hooghly. GOVERNMENT of INDIA.

c. **Cotton, with silk borders and ends.**

5841. [932] 'Chunderee,' Ahmedabad. RAO BAHADOOR SHETT MUGUNBHAEE KRAMCHUND.

5842. [1317] Dhotee, Dharwar, 11R. 2A. W. C. ANDERSON, Esq.

5843. [1998] Dhotee, Rampore. H.H. the NAWAB.

5844. [861] Dhotee, silk and cotton, Ahmedabad. GOVERNMENT of INDIA.

5845. [1316] Dhotees, Dharwar. W. C. ANDERSON, Esq.

This description is used by rich people. The piece contains two dhotees. 15R.

5846–7. [1318–19] Dhotees, Dharwar. W. C. ANDERSON, Esq.

Common wear of the middle classes. Piece of two dhotees, 5R. 6A.

5848–50. [1320–22] Dhotees, Dharwar. W. C. ANDERSON, Esq.

Common wear of male children of the rich and middle classes on feast days. Piece of two dhotees, 12R.

5851. [1323] Dhotee, Dharwar, W. C. ANDERSON, Esq.

Common wear of male children of middle classes, and holiday wear of poorer classes. 9R.

d. **Cotton, with silk and gold in borders and ends.**

5852–3. [863–4] Dhotees, Ahmedabad. 11R. GOVERNMENT of BOMBAY.

e. **Silk.**

5854. [1328] 'Peetamber,' red, Dharwar, W. C. ANDERSON, Esq.

Worn by middle classes at festivals. 18R.

5855. [1329] 'Peetamber,' yellow, Dharwar. W. C. ANDERSON, Esq.

Worn by rich people daily at meals, and by middle classes at meals on festivals, 12R. 11A.

5856–7. [892–3] 'Peetambers,' 5R. 4A., Ahmedabad. GOVERNMENT of BOMBAY.

5858. [5548] 'Peetamber,' white, Hooghly. GOVERNMENT of INDIA.

5859. [5549] 'Peetamber,' bordered, Hooghly. GOVERNMENT of INDIA.

5860. [8198] 'Peetamber,' red, Hooghly. GOVERNMENT of INDIA.

f. **Silk, with gold borders and ends.**

5861–2. [1749–50] (2) Pink, Benares. GOVERNMENT.

E.—WAISTBANDS, AS EZARBUNDS AND CUMMERBUNDS.

a. **Cotton.**

5863. [1292] Nurkuttoo or girdle, Dharwar. W. C. ANDERSON, Esq.

Worn by all classes when working or travelling. Money is ordinarily carried in it. 1R. 8A.

5864. [1799] Sauganeer. GOVERNMENT of INDIA.

b. **Silk.**

5865–70. [3537–42] Ezarbunds, Umritsur. Silk reared by MR. H. COPE; reeled by JAFFER, of Goodarpoor; dyed, &c. under CHUMBER MULL.

5871–4. [5456–8–70] Ezarbunds, Lahore. GOVERNMENT of INDIA.

II.—ARTICLES OF FEMALE ATTIRE.

A.—SAREE.

Upper garment, in the form of scarf, for enveloping the person; one end usually brought over head as a covering (loom made).

a. **Cotton.**

5875. [1277] Saree, Dharwar. W. C. ANDERSON, Esq.

This description is such as the poorer classes wear. Each woman generally has a new one once a year. 2R. 8A. each.

5876. [1278] Saree, Dharwar. W. C. ANDERSON, Esq.

Similar to the preceding. 2R. 2A.

NATIONAL ARCHIVES OF INDIA

5877. [1279] Saree, Dharwar. W. C. ANDERSON, Esq.

Same use as the preceding, but of small size, for young girls. 2R. 8A.

5878. [1286] 'Putta,' Dharwar. W. C. ANDERSON, Esq.

Female children of the poorer classes, between the ages of seven and twelve, wear this at weddings. 1R.

5879. [1287] 'Putta,' Dharwar. W. C. ANDERSON, Esq.

Another description, worn at weddings by female children under seven years old, and also used to dress up images of goddesses. 7R.

5880. [731] Saree, Kutch. 1R. 7A. 8P. H.H. the RAO.

b. Cotton with silk borders.

5881. [8295] Saree, with inscriptions on borders, Santipore. GOVERNMENT of INDIA.

c. Cotton with silk borders and ends.

5882–4. [879–885-6] Sarees, Ahmedabad. GOVERNMENT of BOMBAY.

5885. [2633] Saree, Astagram, Mysore. GOVERNMENT of MYSORE.

5886. [1309] Saree, Dharwar. W. C. ANDERSON, Esq.

Another description, which is the common wear of the middle classes. 6R. 14A.

5887. [1310] Saree, 5R. 14A., Dharwar. W. C. ANDERSON, Esq.

5888. [1311] Saree, Dharwar. W. C. ANDERSON, Esq.

Common wear of the wives of farmers. 3R. 10A.

5889. [1312] Saree, Dharwar. W. C. ANDERSON, Esq.

Worn by farmers' wives on festivals and at weddings. 12R. 3A.

5890. [1313] Saree, Dharwar. W. C. ANDERSON, Esq.

5891. [1314] Saree, Dharwar. W. C. ANDERSON, Esq.

For young girls of from eight to twelve years old. 7R. 12A.

5892. [1315] Saree, Dharwar. W. C. ANDERSON, Esq.

Common wear of girls of poorer classes from eight to twelve years old. 1R. 8A.

d. Cotton, gold embroidered.

5893–5. [7744–6] Saree, Runpore, Cuttack. GOVERNMENT of INDIA.

e. Cotton, with silk and gold embroidered ends.

5896. [887] Saree, Ahmedabad. BOMBAY GOVERNMENT.

5897. [2615] Saree, Chittledroog, Mysore. GOVERNMENT of MYSORE.

5898. [2594] Saree, striped muslin, Bangalore, Mysore. GOVERNMENT of MYSORE.

f. Silk and cotton mixed, and with silk and gold borders and ends.

5899. [880] Saree, Ahmedabad. GOVERNMENT of BOMBAY.

5900. [1158] Saree, Belgaum. GOVERNMENT of BOMBAY.

5901. [2617] Saree, Chittledroog, Mysore. GOVERNMENT of MYSORE.

5902–3. [2609–10] Sarees (2), Bangalore, Mysore. GOVERNMENT of MYSORE.

5904. [1307] Saree, Dharwar. W. C. ANDERSON, Esq.

This description used by middle classes at weddings and festivals (one saree in the piece). 28R.

5905. [1308] Saree, Dharwar.

Another description, worn by rich people daily and by middle classes at festivals. 20R.

5906. [1325] Putta, Dharwar.

Worn by female children of the richer classes at weddings. 23R.

5907. [2616] Saree, Chittledroog, Mysore. GOVERNMENT of MYSORE.

g. Silk.

5908. [930] Sarees, striped, 11R. 4A., Ahmedabad. NEKNAMDAR SUKAWATTEE SHETANEE HURKOOVURBHAEE.

5909. [2576] Saree, Ahmedabad. GOVERNMENT of BOMBAY.

5910. [2577] Saree, 12R. 8A., Ahmedabad. GOVERNMENT of BOMBAY.

5911–2. [3148–9] Sarees (2), Berhampore. GOVERNMENT of INDIA.

5913. [3151] Saree, *diagonal stripes.* GOVERNMENT of INDIA.

5914. [5550] Saree, crimson, Hooghly. GOVERNMENT of INDIA.

NATIONAL ARCHIVES OF INDIA

5915. [5551] 'Tamieng,' Burmah. GOVERNMENT of INDIA.

5916. [1327] Saree, Dharwar. W. C. ANDERSON, Esq.

Worn by Brahmins' wives while eating at festivals. 34R.

5917. [1330] Sulleedar, Dharwar.

Worn by women on festivals.

h. **Silk, silk embroidered.**

5918–19. [9440–1] (2) Green, worn by Parsee ladies, Bombay. GOVERNMENT.

j. **Silk, with gold embroidered ends.**

5920. [5552] Saree, Pegu. GOVERNMENT of INDIA.

k. **Silk, gold borders and ends.**

5921. [588] Saree, figured. 115R., Tanjore. SACCARIM SAHIB, son-in-law to late RAJAH.

5922. [2614] Saree, checked, Chittledroog, Mysore. GOVERNMENT of MYSORE.

5923. [2608] Saree, do., Bangalore, Mysore. GOVERNMENT of MYSORE.

5924. [2592] Crimson and gold stripes, Bangalore, Mysore. GOVERNMENT of MYSORE.

5925. [8234] Saree, Gowhatty, Assam. MAHINEE DEVYA, widow of AMINDARAM PHOOKEM.

B.—SCARFS USED AS SKIRTS OR PETTICOATS.

a. **Cotton.**

5926. [6336] 'Bugis,' Singapore. TAN KIM SING.

5927–35. [6393–401] 'Sarongs,' nine. Do. H.H. INCHE WAN ABOO BAKAR.

b. **Silk.**

5936–40. [6731–5] 'Sarongs,' Singapore. H.H. INCHE WAN ABOO BAKAR.

c. **Silk embroidered.**

5941. [827] Red scarf, Shikarpoor. GOVERNMENT of BOMBAY.

5942–7. [6736–7–9, 6740–2] 'Sarongs,' Singapore. H.H. INCHE WAN ABOO BAKAR.

C.—KERCHIEFS, USUALLY WORN ON HEAD.

a. **Cotton.**

5948–51. [6410–3] Kerchiefs, Singapore. H.H. INCHE WAN ABOO BAKAR.

b. **Silk.**

5952. [4468] Worn by Kareen women, Burmah. Messrs. HALLIDAY, FOX & Co.

5953–6. [6406–9] Do. Malay do., Singapore. H.H. INCHE WAN ABOO BAKAR.

5957. [7802] 'Fareens,' Sauganeer. GOVERNMENT of INDIA.

D.—MADE UP ARTICLES OF FEMALE ATTIRE.

1. *Skirts.*

a. **Cotton.**

5958. [4474] Worn by Kareens, Burmah. Messrs. HALLIDAY, FOX & Co.

b. **Silk.**

5959. [4107] Skirt, native dyed, Penang. PENANG LOCAL COMMITTEE.

5960. [5552] Skirt, Burmah. GOVERNMENT of INDIA.

This wrapped around the body forms the dress of a Burmese female. The quality of the material varies with the station of the wearer.*

c. **Silk, embroidered with gold and silver.**

5961–3. [1096–8, 1231] 'Zubloos,' children's shirts, Surat. GOVERNMENT of BOMBAY.

2. *Dresses, Gold embroidered.*

5964. [5109] Muslin dress, as worn by Princess of Ulwar. H.H. the RAJAH of ULWAR.

5965. [5538] Dress, 'Poshak Murdana Khas,' Ulwar. H. H. the RAJAH.

5966. [10307] 'Khillat,' or dress of honour, Benares. GOVERNMENT of INDIA.

* Local Committee, *Rangoon.*

NATIONAL ARCHIVES OF INDIA

3. *Trowsers.*

a. **Silk, gold embroidered.**

5967. [1099] Trowsers, 'Child's red,' Surat. GOVERNMENT of BOMBAY.

5968. [6334] Trowsers, Singapore. TAN KIM SING.

b. **Woollen.**

5969. [5504] 'Churnee,' Kutch. H.H. the RAO.

E.—MATERIAL FOR MAKING INTO CHOLEES OR BODICES.

Although more strictly coming under piece goods, the under-noted fabrics, which are used for the manufacture of women's bodices or under jackets, are here inserted.

a. **Cotton.**

5970. [1275] 'Khuns,' or cholee pieces, Dharwar. W. C. ANDERSON, Esq.

Contains 4 cholees. This description is used by women working in the fields. 3A. for each cholee, or 12A.

5971. [1276] 'Khuns,' or cholee pieces, Dharwar.

Another description used by the same classes as the preceding. 2A. 9P. for each cholee, or 1R. 11A. 6P.

b. **Silk and cotton mixed.**

5972. [1299] Punchrungee, Dharwar. W. C. ANDERSON, Esq.

Woman's bodice cloth of five colours; worn by upper classes, or poorer classes on great days; 1 khun (or piece). Price, 1R. 1A.

5973. [1300] Punchrungee, Dharwar.

Contains 6 khuns, 6R.

5974. [1301] Punchrungee, Dharwar.

Another description used by the same classes as the preceding. Contains $5\frac{1}{4}$ khuns, 5R. 14A. 6P.

5975. [1302] Punchrungee, Dharwar.

Worn by middle classes; ordinary wear. Contains 4 khuns, 2R. 4A.

5976. [1303] Punchrungee, Dharwar.

Another description with the same uses as the preceding. This piece contains 7 khuns, 4R. 6A.

5977. [1304] Punchrungee, Dharwar.

Common wear of labouring women. Piece contains 1 khun, 2R. 15A. 6P.

5978. [1305] Punchrungee, Dharwar.

Another piece containing 10 khuns, 1R. 14A.

5979. [1306] Punchrungee, Dharwar.

Warp of silk and weft of cotton; worn ordinarily by dancing women, not considered fit for respectable women, 1 khun, 1R. 12A.

c. **Silk.**

5980. [7881] 'Phudkee,' Poonah. GOVERNMENT of BOMBAY.

5981. [7882] 'Cholee,' Poonah. GOVERNMENT of BOMBAY.

5982. [1326] 'Khun' or woman's bodice cloth, Dharwar. W. C. ANDERSON, Esq.

Worn by wives of Brahmins while eating at festivals. 2R.

MISCELLANEOUS ARTICLES OF APPAREL.

Silk Scarfs.

5983. [5107] Two Tusser scarfs, Keonghur, Cuttack. GOVERNMENT of INDIA.

5984. [8219] Figured, 'Balisoree,' Gowhatty, Assam. GOVERNMENT of INDIA.

Silk Scarfs with border.

5985. [2592] Of silk gauze, Assam. BABOO GORUCKCHUNDER, *Boreeah of Seebsaugor.*

5986. [8226] Of Eria silk, Assam. LIEUT. W. PHAIRE.

Cotton Scarfs.

5987. [1038] 'Khess,' chintz, 8R., Hyderabad. GOVERNMENT of BOMBAY.

5988. [3252] Scarf shawls of fine diaper material, Rampore. H.H. the NAWAB.

Cotton, gold borders and ends.

5989. [634] Muslin, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

5990. [708] Do., and gold woven, 19R. 4A. 7P., Kutch. H.H. the RAO.

5991. [772] Chanduse, cotton, coloured border and ends, Khyrpoor. H.H. MEER ALI MORAD.

NATIONAL ARCHIVES OF INDIA

5992. [6738] Salimote, silk, Singapore. H.H. INCHE WAN ABOO BAKAR.

5993. [6404] Salendongs, silk, Singapore. H.H. INCHE WAN ABOO BAKAR.

Worn only around loins.

5994. [6405] Silk and cotton, Singapore. H.H. INCHE WAN ABOO BAKAR.

5995–6. [6402–3] Cotton, Singapore. H.H. INCHE WAN ABOO BAKAR.

5997. [8299] One pair stockings, Serinugger. GOVERNMENT of INDIA.

5998. [8300] One pair gloves, Serinugger. GOVERNMENT of INDIA.

5999, 6000. [8301–2] One pair socks, Serinugger. GOVERNMENT of INDIA.

Walking-Sticks, etc.

6001–5. [5780–4] Walking-sticks, bamboo, Ulwar. H.H. the MAHARAJAH.

6006. [2906] Walking-stick, of sago palm, Seebsagur. MOONSHEE KOOFAITOOLA.

6007. [968] Walking-stick, 'Churree,' Puttiala. H.H. the MAHARAJAH.

6008. [969] Seven walking-sticks, with ivory handles, Puttiala. H. H. the MAHARAJAH.

6009-10. [970–10248] Walking-sticks, Lahore. GOVERNMENT of INDIA.

6011. [5179] Walking-stick, silver mounted, Philibheet. SHEIK BUDROODEEN.

6012. [636] Walking-sticks of cocoa-nut wood, Vizagapatam. H. H. the RAJAH.

6013. [637] Walking-stick of Palmyra wood, Vizagapatam. H.H. the RAJAH.

6014. [638] Walking-stick of betel palm, Vizagapatam. H.H. the RAJAH.

6015. [640] Walking-stick of Kumba wood, Vizagapatam. H.H. the RAJAH.

6016. [641] Walking-stick of Chittunkoodoo wood, Vizagapatam. H.H. the RAJAH.

6017. [6342] Walking-stick, Singapore. H.H. INCHE WAN ABOO BAKAR.

Boots and Shoes.

6018-21. [5526–9] Four pairs shoes, various, 'Joota deesee,' worn by men, Ulwar. H.H. the MAHARAJAH.

6022. [5520] Slippers, 'Jootee,' Lucknow. NAWAB SHURFOOD DOWLAH.

6023. [5519] Shoes, 'boot,' Lucknow. NAWAB SHURFOOD DOWLAH.

6024. [5524] Slippers, 'Jootee,' embroidered in silver, worn by rich men, Lucknow. RAJAH GOREE SHUNKER, *Moraon Oude.*

6025. [5525] Shoes, 'Jootee,' embroidered in silver, Lucknow. RAJAH GOREE SHUNKER.

6026-8. [5521–3] Three pairs shoes, embroidered in gold, Lucknow. RAJAH GOREE SHUNKER.

6029. [5756] Pair slippers, ornamented in gold tinsel, Meerut. KOEER WUZEER ALLY KHAN, *Dep. Magistrate of Meerut.*

6030–1. [2959–60] Two pairs clogs, Bareilly. GOVERNMENT of INDIA.

6032. [1759] Boots, Darjeeling. DR. CAMPBELL.

6033. [5623] Green shoes, Cabul. GOVERNMENT of INDIA.

6034. [5625] Shoes, silver worked, Cabul, GOVERNMENT of INDIA.

6035. [5624] Slippers, worked in chenille, Cabul. GOVERNMENT of INDIA.

6036. [1531] Shoes worn by Mezaree men, Lahore. GOVERNMENT of INDIA.

6037. [3812] Pair Bundela shoes, Jhansee. GOVERNMENT of INDIA.

6038. [4720] Pair of sandals, Sawunt Warree. GOVERNMENT of BOMBAY.

6039. [846] Four pairs shoes, Shikarpoor. GOVERNMENT of BOMBAY.

6040. [780] Pair riding boots, embroidered, Khyrpoor, Sinde. H.H. MEER ALI MOORAD.

6041–2. [781–2] Two pairs of shoes, Khyrpoor. H.H. MEER ALI MOORAD.

6043–5. [621–3] Three pairs of shoes, Vizagapatam. H.H. the RAJAH.

6046–7. [624–5] Two pairs wooden sandals, Vizagapatam. H.H. the RAJAH.

NATIONAL ARCHIVES OF INDIA

6048–9. [4466, 4496] Two pairs men's sandals (Mendoon Cutch), Rangoon. Messrs. HALLIDAY, FOX & Co.

6050. [4497] Pair women's sandals, Rangoon. Messrs. HALLIDAY, FOX & Co.

6051–2. [6330–1] Two pairs women's slippers, embroidered, Singapore. TAN KIM SING.

6053. [4108] Pair women's sandals, Penang. PENANG LOCAL COMMITTEE.

6054. [4109] Pair men's sandals, Penang. PENANG LOCAL COMMITTEE.

The articles of clothing for which space could not be afforded for exhibition are deposited at the India Museum. These include specimens from Ahmedabad, Belgaum, Darjeeling, Dharwar, Goruckpore, Guzerat, Jaloun, Jhansee, Jubbulpore, Mysore, Poona, Punaghur, Shikarpoor, &c. Selections from these collections are, however, on view.

CLASS XXVIII.—PAPER, STATIONERY, PRINTING, AND BOOKBINDING.

Section A.—PAPER, CARDBOARD, AND MILLBOARD.

Paper in the Raw State as it leaves the Mill.

Although not strictly coming under the above heading, the subjoined samples of 'half stuff,' manufactured from jute, are here submitted.

6055–6. [5059–63] Red jute, prepared as 'paper stuff.' G. F. JEFFREYS, Esq.

6057–9. [5060–2] White jute, prepared as 'paper stuff.' G. F. JEFFREYS, Esq.

6060. [5064] Jute, bleached, prepared as 'paper stuff.' G. F. JEFFREYS, Esq.

a. **Printing and Writing Paper, etc.**

6061. [2225] Mudar fibre paper (*Calotropis gigantea*), Bengal.

6062. [7764] Arsenical paper, Hooghly. — PALMER, Esq.

To preserve its contents from insects.

6063. [7765] Specimens of 'country paper,' Mahanad, Hooghly.

6064. [7766] Country paper, Pandooah, Hooghly.

6065. [7767] Satgong paper, Hooghly.

6066. [7768] Sha Bazar paper, Hooghly.

6067. [7769] Doormurpore paper, Hooghly.

6068. [5372] Paper made of hemp, Meerut. SUPERINTENDENT of JAIL.

Made by the prisoners in the Central Jail.

6069. [5375] Paper of plantain-leaf fibre. MEERUT JAIL.

6070. [5374] Paper of aloe-leaf fibre. MEERUT JAIL.

6071. [5371] Paper made of rags, Meerut. SUPERINTENDENT of JAIL.

6072. [5376] Paper made of old records. MEERUT JAIL.

6073. [5373] Bibulous paper. MEERUT JAIL.

6074. [5377] Herbarium paper (kyanised). MEERUT JAIL.

6075. [10302] Paper made at Agra Central Jail. DR. W. WALKER.

Made of old ropes and gunny bags, bleached by means of carbonate of soda and lime. Such paper can be produced at 5R. or 10s. per ream.

6076. [3814] Kalpee paper, Kalpee, Jhansee.

6077. [7770] Paper of fibre of *Hibiscus cannabina*, Lucknow.

6078. [7248] Paper dyed with *Carthamus tinctorius*, Lucknow.

CONTRIBUTED BY H. H. SIR JUNG BAHADOOR, K.C.B.

6079. [6540] Stems and bark of *Daphne cannabina*, Nepaul.

6080. [6541] Paper brick of *Daphne cannabina*, Nepaul.

6081. [5904] Nepaul paper, 1st quality.

6082. [5905] Nepaul paper, 2nd quality.

6083. [5906] Nepaul paper, 3rd quality.

6084. [5907] Nepaul paper, thinnest quality.

NATIONAL ARCHIVES OF INDIA

Made from the *Daphne cannabina*. COLONEL RAMSAY, Resident at the Court of Nepaul, forwards the following remarks: —

The Daphne is a small evergreen perennial shrub, somewhat like a laurel, which bears poisonous berries. There are several species of it in Nepaul, from all of which, I am told, that paper is made. In some kinds the flowers are pure white, in others dirty white, tinged with pink or purple; and in my rambles last spring, at the back of a high mountain, north of the residency, I found two or three varieties of it, the flowers of which were bright yellow, very much like the large yellow jessamine, for which, at a little distance, I mistook it. These shrubs grow to a height of ten or twelve feet. I believe that the Nepaul paper has been sent to England in quantities, in all stages of preparation; but no notice has ever been taken of it, that I am aware of. Of the prepared pulp I sent two maunds to Messrs. Mackey & Co., of Calcutta, in November 1855. It cost 22R. 2A. per maund, delivered at Dinapore, and was intended for some Fibre Company in England; but as I have not had a line from those gentlemen since regarding it, I presume it was not found to answer. There is an impression in the Plains (the *Friend of India* not long ago repeated it) that the Nepaul paper is prepared with arsenic. This is quite a mistake, for arsenic is not allowed to be sold here, nor any other virulent poison, under a heavy penalty. The whole tribe of plants bearing the name of Daphne are more or less poisonous; but the Daphne paper cannot retain the poisonous quality of the plant, as rats and insects often eat it with apparent avidity. In my opinion, this unsightly paper is much overrated. It is certainly tough when kept dry, and can be used like cloth, for wrapping up dry substances in; and it has one other good quality, which renders it superior in *that* respect to the ordinary country paper—it can be used after having been saturated with water, provided it be carefully dried within a reasonable time after it has been wetted.

6085. [10231] Nepaul paper. W. OSBORNE, Esq., Gorruckpore.

6086. [1866] Stem, bark, and leaf of *Daphne cannabina*, Lahore.

Used for making Nepaul paper.

6087. [2223] 'Gundhera' paper (*D. cannabina*), Kangra.

Said never to be destroyed by insects.

6088. [6358] Nepaul paper, Behar.

This substance is manufactured almost exclusively in Nepaul from the bamboo, and arborescent grass. After being cut, it is beaten in wooden mortars until reduced to a pulpy mass, then thrown into a vat of water, the impurities separated, and when of a proper consistence, it is spread on linen to be dried; the surface is rendered smooth by friction, and with a pebble on boards. Its structure is very tough, and cannot be torn rectilineally; and it is most serviceable for filtration, as the fibres do not separate readily when saturated with moisture, and will resist in a moist condition considerable rough handling.

6089. [5368] Bamboo paper, Bullooah.

6090. [2224] Paper made from the bamboo, Lahore.

6091. [5368] Bamboo paper, Pegu.

6092. [6522] Paper 'Desee kaguz,' Ulwar. H.H. the MAHARAJAH.

6093. [7240] Tow of *Hibiscus esculentus*. DR. R. RIDDELL.

6094. [7241] Paper made therefrom. DR. R. RIDDELL.

As already mentioned, DR. RIDDELL strongly recommends the *Hibiscus esculentus* for this purpose.

6095. [418] Paper of six kinds, Madras. RAMANJOOLO NAIDOO, manufacturer.

6096. [599] Paper of two sorts, Salem. H. A. BRETT, Esq.

Section B.—STATIONERY.

No representatives of this section.

Section C.—PLATE, LETTERPRESS, AND OTHER MODES OF PRINTING.

6097. [10303] Specimen of lithographic printing, Agra Jail. DR. W. WALKER.

Taken, without selection or preparation, from the stones in use at the time, so as to give a fair idea of the style of work done in the prison.

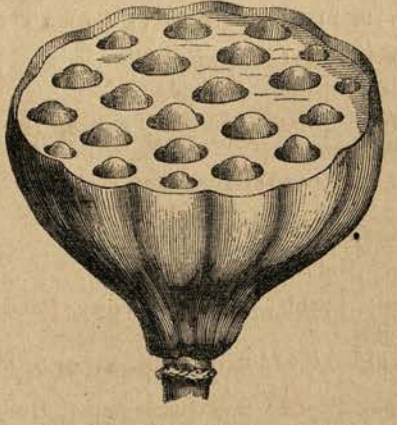
6098. [5370] Specimen of lithographic printing, Meerut Jail. SUPERINTENDENT.

6099. [6643] Specimens of printing. BENGAL PRINTING COMPANY.

6100. [601] Native plants nature-printed at Mangalore. V. P. COELHO, Esq.

6101. [8105] Two vols. nature-printed plants, Bengal.

6102. [532] Wood-cut block of sandalwood, with impressions therefrom, showing the applicability of this wood to the purposes of the engraver. M. C. COOKE, Esq. *London.*



IMPRESSION OF SANDALWOOD BLOCK.

6103. [4265] Specimen of block printing (two kinds), Darjeeling. DR. CAMPBELL.

6104–6. [4262–4] Printing blocks, Darjeeling. DR. CAMPBELL.

NATIONAL ARCHIVES OF INDIA

CLASS XXIX.—EDUCATIONAL WORKS AND APPLIANCES.

Section A.—BOOKS, GENERAL APPLIANCES FOR TEACHING, ETC.

6107. [9442] Specimen of Works published by the Christian Vernacular Education Society for India:—First and Second Reading Books in Punjabi; The Lanka Nidhana; Tamil Geographical Primer; Desopakari—an Illustrated Tamil Magazine, 2 Nos. and 2 Maps.

6108. [2221] Goldsmith's Traveller and Deserted Village, paraphrased for Schools and Colleges in India, Calcutta. Messrs. G. P. ROY & Co.

Paraphrased by BABOOS W. C. and G. C. MITTER.

6109. [2517] Sinde Educational Literature, 8 vols., bound with gold and silver embroidered covers, Sinde.

These volumes are published by the Government Educational Department in Sinde. Director, MAJOR GOLDSMID.

6110. [3198] Memoirs of the Geological Survey of India, 2 vols. 8vo. PROF. OLDHAM.

6111. [3199] Palæontologia Indica, 1 vol. 4to. Do.

NATIVE WORKS, WRITINGS, AND SPECIMENS OF CALIGRAPHY, ETC.

6112. [1768] 'Boom' (1 vol.), a Thibetan work in 12 vols., containing Tracts of the Eloopka Section, Darjeeling. DR. CAMPBELL.

The remaining 11 vols. are at the India Museum.

6113. [4300] Llama's Corona. DR. CAMPBELL.

6114. [2198] Copy of the Treaty between the Government of Bengal and the Rajah of Sikkim. DR. CAMPBELL.

6115–17 [5406-8] Specimens of Nagree writing, Ulwar. H. H. the MAHARAJAH.

6118–21. [5401–4] Specimens of Nastaley writing, Ulwar. H. H. the MAHARAJAH.

6122–4. [1653–5] Specimens of caligraphy, Puttiala. H. H. the MAHARAJAH.

CONTRIBUTED BY BAVA DASSOUN DHA SINGH OF LOODIANAH.

6125. [5410] Specimens of caligraphy.

6126. [5409] Phrases cut in paper.

6127. [5411] Phrases embossed on paper with the thumb nail.

6128–9. [5412] Three specimens of Persian writing, Lucknow. NAWAB SHURFOOD DOWLAH.

6130 [5413] Portfolio.

6131. [2296] MSS. on Palmyra leaf, Malacca. DR. MCPHERSON, Madras.

Section B.—APPARATUS, ETC. EMPLOYED FOR EDUCATION, SUCH AS PLANS, SECTIONS, ETC.

6132. [8001] Series of drawings used in the School of Industrial Arts, Madras. DR. HUNTER.

6133. [4871] Eleven plates of geometrical drawings, School of Industrial Arts, Madras. DR. HUNTER.

Section C.—APPLIANCES FOR PHYSICAL EDUCATION, INCLUDING TOYS AND GAMES.

The specimens of ivory and horn-work coming under the head of 'Games,' are here inserted along with the Table showing the value of the ivory and ivoryware exported from India (p. 251).

6134. [3132] Set of chessmen, elaborately carved in ivory by BAWUL of *Berhampore*. GOVERNMENT of INDIA.

6135. [3153] Pair dice boxes and 2 dice, Berhampore. GOVERNMENT of INDIA.

6136–7. [3146, 3152] Puzzles, Berhampore. GOVERNMENT of INDIA.

6138. [1658] Set of chessmen and dice, Umritsur. GOVERNMENT of INDIA.

NATIONAL ARCHIVES OF INDIA

TABLE SHOWING THE QUANTITIES (AS FAR AS CAN BE ASCERTAINED) AND THE VALUE OF IVORY AND IVORYWARE EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1850-51 TO 1860-61.

Years	Whence Exported	Countries whither exported: United Kingdom		France		Other Parts of Europe	America		China		Arabian and Persian Gulfs		Other Parts		Total Exported to all Parts		
		Quantity	Value	Quantity	Value	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity		Value
		cwt.	£	cwt.	£	£	cwt.	£	cwt.	£	cwt.	£	cwt.	£	cwt.	tons	£
1850-51	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	1	26	..	..	..	..	..	..	..	..	..	..	..	1	..	26
	Bombay	2,641	40,927	11	203	..	9	227	143	1,670	4	33	..	..	2,808	140	43,060
	All India	2,642	40,953	11	203	..	9	227	143	1,670	4	33	..	..	2,809	140	43,086
1851-52	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	7	140	..	..	..	..	..	..	3	..	..	..	..	7	..	143
	Bombay	4,365	85,809	2	33	..	90	2,110	370	2,034	2	10	..	..	4,829	241	89,996
	All India	4,372	85,949	2	33	..	90	2,110	370	2,037	2	10	..	..	4,836	242	90,139
1852-53	Bengal	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
	Madras	..	243	..	..	..	..	..	..	..	..	..	..	1	..	..	244
	Bombay	..	50,975	..	15	31	..	100	..	4,379	..	32	..	249	..	..	55,781
	All India	..	51,218	..	15	31	..	100	..	4,379	..	32	..	250	..	..	56,025
1853-54	Bengal	26	613	..	..	..	..	..	..	..	..	..	8	143	34	2	756
	Madras	..	182	..	..	..	..	..	..	..	..	..	..	3	..	..	185
	Bombay	..	77,957	..	391	..	..	..	..	1,068	..	18	..	520	..	..	79,954
	All India	..	78,752	..	391	..	..	..	..	1,068	..	18	..	666	..	..	80,895
1854-55	Bengal	..	613	..	..	..	..	..	..	..	..	..	..	82	..	..	695
	Madras	..	359	..	..	..	..	..	..	..	..	..	..	..	..	..	359
	Bombay	..	64,501	..	366	20	..	..	..	460	..	36	..	484	..	..	65,867
	All India	..	65,473	..	366	20	..	..	..	460	..	36	..	566	..	..	66,921
1855-56	Bengal	..	582	..	39	..	..	..	..	..	..	..	..	349	..	..	970
	Madras	..	187	..	..	..	..	..	..	..	..	..	..	4	..	..	191
	Bombay	..	79,009	..	51	36	..	..	204	1,921	..	27	..	179	..	..	81,223
	All India	..	79,778	..	90	36	..	..	204	1,921	..	27	..	532	..	..	82,384
1856-57	Bengal	..	597	..	44	38	..	..	..	11	..	..	..	44	..	..	934
	Madras	..	258	..	..	..	..	..	..	..	..	..	..	30	..	..	288
	Bombay	..	123,298	..	25	1,483	..	..	..	1,010	..	..	..	1,058	..	..	126,874
	All India	..	124,153	..	69	1,521	..	..	..	1,021	..	..	..	1,132	..	..	128,096
1857-58	Bengal	..	1,428	..	38	..	..	6	..	..	..	..	..	444	..	..	1,916
	Madras	..	408	..	..	..	..	..	..	..	..	..	..	..	..	..	408
	Bombay	..	14,830	..	289	102	..	..	..	261	..	13	..	1,986	..	..	17,481
	All India	..	16,666	..	327	102	..	6	..	261	..	13	..	2,430	..	..	19,805
1858-59	Bengal	..	407	..	136	25	..	..	..	1,330	..	..	..	946	..	..	2,844
	Madras	..	345	..	..	..	..	..	..	..	..	..	..	10	..	..	355
	Bombay	..	84,344	..	..	..	..	..	..	9,284	..	283	..	1,047	..	..	94,958
	All India	..	85,096	..	136	25	..	..	..	10,614	..	283	..	2,003	..	..	98,157
1859-60	Bengal	..	341	..	..	..	..	..	..	100	..	..	..	445	..	..	886
	Madras	..	583	..	..	..	..	..	..	..	..	..	..	..	..	..	583
	Bombay	..	86,098	..	17	..	..	26	..	9,599	..	134	..	783	..	..	95,657
	All India	..	86,022	..	17	..	..	26	..	9,699	..	134	..	1,228	..	..	97,126
1860-61	Bengal	..	234	..	..	..	..	..	10	310	..	..	..	33	..	..	577
	Madras	..	484	..	..	..	..	..	..	..	..	..	..	31	..	..	515
	Bombay	..	25,735	..	12	6	..	71	..	3,688	..	104	..	1,430	..	..	31,046
	All India	..	26,453	..	12	6	..	71	..	3,998	..	104	..	1,494	..	..	32,138

NATIONAL ARCHIVES OF INDIA

6139 [5439] Chessmen and box, Lahore. GOVERNMENT of INDIA.

6140. [7250] Chessmen, wooden, Cuttack. GOVERNMENT of INDIA.

6141. [7997] Chessmen, ivory, Luckimpore, Assam. BABOO LOTHONDHUR PHOOKIN.

6142–3. [1045, 8000] Two set of chessmen and dice, Puttiala. H.H. the MAHARAJAH.

6144. [10647] Chessboard, ivory, and buffalo horn, Vizagapatam. GOVERNMENT of MADRAS.

6145. [10501] Chessboard, satinwood and buffalo horn, and two sets of men, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

6146 [1052] Chess table and chessmen, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

6147. [7810] Playing cards, two boxes, Jeypore. H. H. the RAJAH.

6148. [10324] Playing cards, Maunbhoom. GOVERNMENT of INDIA.

6149. [4717] Playing cards, two boxes, Sawunt Warree. GOVERNMENT of BOMBAY.

Section D.—ILLUSTRATIONS AND SPECIMENS OF NATURAL HISTORY AND PHYSICAL SCIENCE.

A series of specimens of Fossil Cephalopoda of the cretaceous rocks of Southern India. PROF. OLDHAM, *Superintendent of the Geological Survey of India*, viz:—

6150. [*a*] *Belemnites fibula*, Forbes; Ootatoor, Trichinopoly, 4 specimens.

6151. [*b*] *Belemnites fibula*, 9 specimens.

6152. [*c*] *Belemnites fibula*, 4 specimens.

6153. [*d*] *Belemnites fibula*, 9 specimens.

6154. [*e*] *Belemnites fibula*, 3 specimens.

6155. [*f*] *Belemnites stilus*, Blandford, 3 specimens.

6156. [*g*] *Belemnites stilus*, 6 specimens.

6157. [*h*] *Belemnites stilus*, 4 specimens.

6158. [*i*] *Belemnites seclusus*, Blandford, 9 specimens.

6159. [*k*] *Belemnites seclusus*, 1 specimen.

6160. [*l*] Septum of Phragmocone of *Belemnites*, Odium, Trichinopoly.

6161. [1] *Nautilus Bouchardianus*, Shutanure.

6162. [2] *N. Bouchardianus*, Olapandy, pl. IV.,* fig. 1.

6163. [3] *N. Bouchardianus*, Pondicherry, pl. V., fig. 2.

6164. [4] *N. Bouchardianus*, Arrialoor, Trichinopoly, pl. IV., fig. 6.

6165. [5] *N. Bouchardianus*, Shillagoody, pl. V., fig. 3.

6166. [6] *N. Bouchardianus*, Arrialoor.

6167. [7] *N. Bouchardianus*, young specimen, Arrialoor.

6168. [8] *N. Clementinus*, Karapandy, pl. VI., fig. 1.

6169. [9] *N. Clementinus*, Olapandy, pl. VI., fig. 2.

6170. [10] *N. Bouchardianus*, Arrialoor, pl. VI., fig. 1.

6171. [11] *N. Bouchardianus*, Arrialoor.

6172. [12] *N. Bouchardianus*, Koloture, fig. 5.

6173. [13] *N. Huxleyanus*, Moonglepandy, pl. IX., fig. 1.

6174. [14] *N. Huxleyanus*, Serdamungalun, pl. VII., fig. 3.

6175. [15] *N. Huxleyanus*, Andoor.

6176. [16] *N. Huxleyanus*, Shutanure, pl. IX., fig. 3.

6177–8. [17–8] *N. Huxleyanus*, Moonglepandy.

6179. [19] *N. Huxleyanus*, Andoor.

6180. [20] *N. Huxleyanus*, Coonum, pl. VII., fig. 4.

6181. [21] *N. Danicus*, Sainthoray.

6182. [22] *N. Danicus*, Ninnyoor.

6183. [23] *N. Huxleyanus*, Andoor.

6184–5. [24–5] *N. justus*, Odium, pl. X., fig. 3.

---

* These figures refer to the Illustrations in the Palæontologia Indica.

NATIONAL ARCHIVES OF INDIA

6186-7. [26-7] *Nautilus elegans*, Shutanure, pl. VIII., fig. 4.

6188. [28] *N. splendens*, Odium, pl. X., fig. 1.

6189. [29] *N. elegans*, Annapandy, pl. XVI., fig. 2.

6190 [30] *N. formosus*, Karapandy, pl. XIV., fig. 4.

6191. [31] *N. formosus*, Andoor, pl. XV., fig. 1.

6192. [32] *N. Kayeanus*, Ootatoor, pl. XVIII., fig. 2.

6193. [33] *N. augustus*, Odium, Trichinopoly, pl. XIV., fig. 1.

6194. [34] *N. clementinus*, Coothoor, Trichinopoly.

6195. [35] *N. justus*, Odium, pl. X., fig. 2.

6196. [36] *N. clementinus*, Ootacoil, pl. VII., fig. 2.

6197. [37] *N. elegans*, Kunnanore, pl. XVI., fig. 1.

6198. [38] *N. elegans*, Andoor, pl. XVI., fig. 4.

6199. [39] *N. Kayeanus*, Ootatoor, pl. XVI., fig. 5.

6200. [40] *N. Kayeanus*, Ootatoor, pl. XVII., fig. 2.

6201. [41] *N. pseudo-elegans*, Odium, pl. XVII., fig. 3.

6202. [42] *N. serpentinus*, Rayapootha pakkan, pl. XII., fig. 1.

6203. [43] *N. splendens*, Odium, pl. IX., fig. 5.

6204. [44] *N. Forbesianus*, Moraviatoor.

6205. [45] *N. Forbesianus*, pl. XIII., figs. 2, 3.

6206. [46] *Nautilus Kayeanus*, Ootatoor, pl. XVII., fig. 1.

6207. [47] *N. Forbesianus*, Odium.

6208. [48] *N. Kayeanus*, Purawoy.

6209. [49] *N. elegans*, Annapandy, pl. XVI., fig. 3.

6210. [50] *N. formosus*, Kurribeem, pl. XIV., fig. 3.

6211. [51] *N. Forbesianus*, Odium.

6212. [52] *N. Kayeanus*, Ootatoor, pl. XVIII., fig. 1.

6213. [53] *N. Negama*, Sirgumpore, pl. XX., fig. 2.

6214. [54] *N. crebricostatus*, Ootatoor, pl. XXII., fig. 1.

6215. [55] *N. pseudo-elegans*, Odium, pl. VIII., fig. 3.

6216. [56] *N. pseudo-elegans*, Odium, pl. XX., fig. 1.

6217. [57] *N. Trichinopolitensis*, Arrialoor.

6218. [58] *N. rota*, Mulloor.

6219. [59] *N. crebricostatus*, Ootatoor, Trichinopoly, pl. XXI., fig. 3.

6220. [60] *N. Kayeanus*, Trichinopoly, pl. XXI., fig. 2.

6221. [61] *N. pseudo-elegans*, Odium, pl. XIX., fig. 1.

6222. [62] *N. Trichinopolitensis*, Arrialoor, pl. XXIII., fig. 1.

6223. [63] *N. pseudo-elegans*, Odium, Trichinopoly.

6224. [64] *N. rota*, Arrialoor, pl. XXV., fig. 3.

6225. [65] *N. rota*, Karapandy, pl. XXIV., fig. 3.

NATIONAL ARCHIVES OF INDIA

CLASS XXX.—FURNITURE AND UPHOLSTERY, INCLUDING PAPER HANGINGS AND GENERAL DECORATIONS.

Section A.—FURNITURE AND UPHOLSTERY.

Division I.—*Furniture* (*Carved, etc.*).

FROM BOMBAY. MANUFACTURED BY BHRIMJEE BYRAMJEE, AND CONTRIBUTED BY THE GOVERNMENT OF BOMBAY.

6226. [258] Large carved screen, with two side-tables.

6227. [5885] Carved cheffonier or side-board.

6228–9. [5886–7] Carved sofas.

6230–1. [251–7] Carved easy-chairs.

6232–4. [256, 266, 300] Carved drawing-room chairs.

6235-41. [252, 263–8] Carved flower-stands.

6242. [8170] Carved flower-stands.

6243–4. [259–60] Carved pier-tables.

6245. [253] Carved teapoy or round table.

6246. [255] Pair carved teapoys.

6247–8 [2883–4] Carved card-tables.

6249. [262] Carved oblong table.

6250. [254] Carved oblong table, Bombay. J. GIBBS, Esq.

6251. [905] Carved flower vase, Ahmedabad. GOVERNMENT of BOMBAY.

6252. [8168] Carved flower vase. R. ASHBURNER, Esq.

FROM MADRAS. J. DESCHAMPS, EXHIBITOR AND MANUFACTURER.

6253. [372] Carved frame for chimney glass.

6254. [373] Pair carved oval frames.

6255. [374] Carved Davenport or lady's writing-table.

6256. [371] Carved drawing-room sofa.

6257–8. [4451–2] Carved arm-chairs (rosewood).

6259–60. [4453–4] Carved drawing-room chairs.

6261. [8169] Pianoforte in carved case, Madras. KIRKMAN & SON, *London.*

Exhibited as a specimen of carving by the native artisans of Madras, to whom the design was furnished by Messrs. KIRKMAN & SON, of London.

6262–4. [564–6] Flower-stands of stag horn, Vizagapatam. MADRAS GOVERNMENT.

Division II.—*Papier Maché, Japanned Goods (Inlaid Work), etc.*

a. Papier Maché.

6265–6. [5638–9] Blotting case, Serinugger, Cashmere. CENTRAL COMMITTEE, *Lahore.*

6267. [5640] Tea caddy, Serinugger.

6268–71. [5641–4] Glove boxes, Serinugger.

6272–3. [5636–7] Pin boxes, Serinugger.

6274–9 [5626–31] Cigar cases, Serinugger.

6280-1. [5632-3] Card trays, Serinugger.

6282. [5635] Pipe case, Serinugger.

6283. [3245] Pen cases, Umritsur.

6284–6. [10008–10] Three inkstands, Budaon.

PAPIER MACHÉ IMITATIONS OF FRUIT, &c., BY MR. W. KOMARECK, MADRAS.

6287. [4445] Plate of grapes and pomegranates.

6288. [4446] Plate of mangoes, pomegranates and oranges.

NATIONAL ARCHIVES OF INDIA

6289. [4447] Plate with loaf of bread.

6290. [4448] Plate of roast turkey.

6291. [4449] Plate of pine apple.

6292. [4450] Pomegranates.

b. Japanned Work.

6293-4. [1458, 3405] Boxes and stands, Bareilly. ALLAHABAD COMMITTEE.

6295-6 [6493-4] Two drawing room chairs, green velvet cushions, embroidered, Bareilly.

6297. [2955-6] Teapoys, Bareilly.

6298-9. [2957-8] Two footstools, Bareilly.

6300-1. [10031, 10051] Knitting boxes, Bareilly.

6302. [5355] Bookholder, Bareilly.

6303. [5442] Set of charpoy or bedstead legs, Meerut.

6304. [3501] Folding bedstead, Moradabad. GOVERNMENT of INDIA.

Divisions III. and IV.—*Indian Inlaid Work.*

The following note on the 'Inlaid Work' of Bombay is by DR. BIRDWOOD:—

This kind of work is stated to have been carried on in Bombay for about 60 years, having been originally introduced from Hyderabad, Sinde. It is said to have been introduced into Sinde about twenty years previously from Persia; its native seat is supposed to be Shiraz. From Bombay the work has been carried to Surat.

The following are the materials used in the work:—
A mineral *green dye* for dyeing the stag's horn.
Tin Wire (Kylacenotur) used in the ornamental veneering.
Sandalwood, ebony and *sappanwood* used in the framework, and sometimes entering into the ornamental veneer.
Ivory, Do.
Stag's Horn, Do. Dyed green with mineral dye.
Glue, for binding. Ahmedabad glue being esteemed far above all other kinds, including English.

The tools employed are a *wheel* for drawing the tin wire into different shapes for the preparation of the ornamental patterns;
Saws of different kinds, files, chisels, drills, planes, and a T square.

PROCESS OF MANUFACTURE.

The only 'mystery' is in the portion of the work which appears inlaid, but which is not inlaid in the first sense of the term. The patterns are veneered on, and may be applied to any flat or gently rounded surface.

The ornamental veneer is prepared by binding the rods of ivory, tin, sappan, ebony, and green dyed stag's horn of different shapes together.

These rods are usually three-sided, cylindrical, and obliquely four-sided.

They are arranged so as when cut across to exhibit definite patterns, and in the mass present either the appearance of rods or of thin boards, the latter being to be sliced down into borders. The primary rods are sometimes bound together before being sliced, so as to form more complex patterns.

The patterns commonly found in Bombay ready prepared for use are:—

1st. *Chukra* (*i.e.* wheel), the smaller being of the diameter of a fourpenny bit, and the larger of a shilling.
2nd. *Kutkee*, or hexagonal, being composed of obliquely four-sided rods, of ivory, ebony or sandalwood, and of ebony, tin wire puttung, and green dyed stag's horn mixed.
3rd. *Trenkoonia gool* (*i.e.* three-sided flower), a three-sided pattern composed of tin wire, ebony, ivory, puttung, and green dyed stag's horn.
4th. *Gool* (flower), obliquely four-sided, and compounded as last. These are all for the central veneer. The border patterns are:—
5th. *Teekee*, round and varying in size from a twopenny bit to a large pin's head, and used for the central patterns as well as for bordering.
6th. *Gundeerio* (plumb, full), composed of all the materials used in this work.
7th. *Ek dana* (one grain), having the appearance of a single row of tin beads set in ebony.
8th, 9th, and 10th, *Poree lehur*, '*Sansoohansio*' and '*Porohansio*,' varieties of border ornaments not easy to distinguish from one another by mere description.

Remarks. Fifty manufacturers are established in Bombay, the majority having commenced business during the last few years; six, however, have been settled here from periods varying from twenty-five to forty-six years. A few employ workmen, but the majority work for themselves, with the aid, in many cases, of a brother or son. The inlaid work resembles Tunbridge ware.

6305. [525] Materials, tools, and patterns referred to above, and exhibited in centre of Case 10.

SPECIMENS EXHIBITED.

6306. [1507] Box, inlaid with ivory, Delhi. GOVERNMENT of INDIA.

FROM SURAT. GOVERNMENT OF BOMBAY.

6307. [302] Chessboard.

6308. [314] Jewel box.

6309. [271] Chessboard.

6310. [272] Workbox, small.

6311. [273] Inkstand.

NATIONAL ARCHIVES OF INDIA

6312. [274] Bookstand.

6313–4. [275–8] Watchstands.

6315–6. [279–80] Cribbageboard, double.

6316–7. [281–2] Cribbageboard, single.

6318–9. [283–4] Card baskets.

6320. [287] Two card cases.

6321. [288] Four card cases.

6322–3. [2751–2] Twelve needle cases.

6324. [290] Square table.

6325. [291] Working and writing case.

6326. [292] Glove box.

6327. [293] Envelope case, diamond pattern.

6328–9. [294–5] Envelope case, round.

6330. [296] Portfolio.

6331. [297] Card basket.

6332. [298] Glove box.

6333. [299] Wafer box.

6334. [335] Round table with two drawers.

6335. [336] Writing desk, large.

6336. [337] Writing desk, small.

6337. [339] Solitaire game.

6338. [340] Inkstand.

6339–40. [341–2] Card baskets.

From BOMBAY. GOVERNMENT OF BOMBAY.

6341. [344] Portfolio, diamond pattern

6342. [345] Portfolio, black.

6343–5. [347–9] Envelope cases.

6346–9. [350–3] Four glove boxes, various patterns.

6350–4. [356–60] Five glove boxes.

6355. [361] Bookstand.

6356. [362] Paper stand.

6357. [363] Pin cushion.

6358. [364] Round box.

6359–62. [365–8] Four wafer boxes.

6363–4. [369–70] Two round boxes.

6365. [502] Portfolio, diamond pattern, yellow.

6366. [503] Bookstand.

6367. [504] Solitaire game, board and 33 marbles.

6368. [505] 'Panjra,' or paper holder.

6369–71. [506–8] Paper holders.

From BOMBAY. J. MACFARLANE, ESQ.

6372. [509] Writing desk.

6373. [510A] Chessboard.

6374. [510B] Two paper cutters.

6375. [511] Workbox.

6376. [512] Inkstand.

6377. [513] Bookstand.

6378. [514] Watchstand.

6379. [515] Card basket.

6380. [516] Card basket.

6381. [517] Glove box, round top.

6382–3. [518–9] Glove box, diamond pattern.

6384–5. [520–1] Portfolio.

6386. [522] Cribbageboard.

6387–91. [10650–4] Knitting boxes, Vizagapatam. H. H. the RAJAH.

NATIONAL ARCHIVES OF INDIA

From VIZAGAPATAM. MADRAS GOVERNMENT.

6392. [583] Card basket.

6393. [584] Writing box.

6394. [585] Book case.

From VIZAGAPATAM. DR. MACPHERSON, MADRAS.

6395. [419] Envelope case.

6396. [420] Tea caddy.

6397. [421] Jewel case.

6398. [429] Tortoise of ivory and tortoise shell.

From BANGALORE, MYSORE. J. LACEY, Esq.

6399. [2676] Workbox.

6400. [2678] Card basket.

6401. [2679] Jewel case.

Exhibited by Mr. J. GLADDING. LONDON.

6402. [2405] Two paper cases.

6403-4. [2403-4] Workbox.

6405. [2402] Writing desk.

6406. [2406] Inkstand.

6407-9. [2407-8-10] Glove boxes.

6410. [2442] Walking stick.

Exhibited by Mr. J. NEAL. LONDON.

6411. [2437] Workbox.

6412. [2434] Writing desk.

6413. [2436] Paper case.

6414. [2432] Dressing case.

6415. [2440] 'Fox and geese' board.

6416. [2435] Sandalwood workbox.

6417. [2438] Sandalwood inkstand.

6418. [2433] Envelope case.

6419. [2441] Set of ebony chessmen.

Exhibited by Messrs. FARMER AND ROGERS. LONDON.

6420. [7751] Sandalwood envelope case.

6421. [7752] Portfolio.

6422. [7753] Knitting box.

CLASS XXXI.—IRON AND GENERAL HARDWARE.

HARDWARE, METAL WORK, ETC.

From MORADABAD. GOVERNMENT of INDIA.

6423. [3299] Hookah bottom, brass, plated and engraved, large.

6424-5. [3300-1] Hookah bottom, brass, small.

6426-7. [1527-8] Two tumblers.

6428. [1517] Tumbler, large.

6429. [1518] Tumbler, small.

6430-1. [1525-6] Tumblers, with covers and platters.

6432-3. [1512-13] Two plates, small, for betel leaf.

6434. [1523] Spittoon, large.

6435. [1542] Spittoon, small.

6436-7. [1521-2] Two cups.

6438-9. [1519-20] Two brass wine goblets, plated and engraved.

6440. [1516] Plate, large.

6441-2. [1514-5] Two plates, small.

The above articles are remarkable for the beauty of the patterns engraved on them, also for their shapes and the superior way in which they are tin-plated. Contributed by MAHOMED SYUT REHMUT ALEE, KADIR BUX, MAHOMED HAFIZ, and MAHOMED HYNE, through the CENTRAL COMMITTEE, *Allahabad*.

From HOOGHLY. GOVERNMENT OF INDIA.

6443. [8178] 'Ghurra,' brass, for fetching water.

6444. [8179] 'Garoo,' water vessel for cleaning purposes.

6445. [8183] 'Dabaree,' brass, vessel for steeping betel leaf.

6446. [8189] 'Bhogona,' do., for cooking curries, &c.

6447. [8187] 'Ghotee,' do., for drinking.

NATIONAL ARCHIVES OF INDIA

6448. [8188] 'Ghotee,' brass, engraved, for drinking.

6449. [8180] 'Picdan,' brass, a spittoon.

6450. [8190] 'Recaybee,' plate for tiffin or luncheon.

6451. [8185] 'Hookah Bytuck,' stand for hookah.

6452. [8181] 'Kassa,' or 'Thalla,' of mixed metal, plate for food.

6453-4. [8191-2] 'Batta,' with cover, on which prepared betel leaf is kept.

6455. [8182] 'Ghuttee,' of mixed metal.

For drinking water.

6456. [8184] 'Battee,' of mixed metal.

For keeping curries.

6457-64. [8186-93] Mugs, of mixed metal.

In imitation of European drinking glasses.

From SEWAN. SHAIK FUKEER HAISSAIN.

6465. [5253] Spittoon, brass.

6466-8. [5252-4] Hookah, brass.

6469. [5251] 'Catorah,' large cup, brass.

6470. [5258] 'Catorah,' small cup, brass.

6471. [5257] Mug, brass.

6472-3. [5255-6] Mugs, small, brass.

6474. [5259] Dish, of brass, Luckimpore, Assam. BABOO KESSUBRAM BOROOAH.

6475. [5573] Brass cups, Cuttack. GOVERNMENT of INDIA.

6476. [5574] Brass bangles, &c., Cuttack. GOVERNMENT of INDIA.

From NEPAUL. H.H. SIR JUNG BAHADOOR, K.C.B.

6477. [5926] Sacrificial lamp, on elephant stand.

6478. [5930] Plate, small, brass.

6479. [5927] Vessel, copper, used at festivals.

6480. [5925] Water pot, or 'Jharee.'

6481. [5928] Pen and ink case, brass, worn in the belt.

6482-3. [5261-2] Two locks, used by native bankers, &c.

6484. [5260] Iron padlock, Patna. GOVERNMENT of INDIA.

6485. [1532] Iron umbrella, comprising inkstand, dagger, spear, scissors, &c.; it may also be converted into a lanthorn, Sarun, Patna. BABOO BINDAS HUREE PERSHAD.

6486. [8197] Water engine and pump, brass, Patna. BABOO BINDAS HUREE PERSHAD.

6487. [5366] 'Sarota,' for cutting betel nuts, silver, Shahjehanpore. KUNHYE LOLL TEHSELDAR, *Jehanabad.*

6488. [5367] 'Sarota,' steel, Shahjehanpore. MINDAEE LOHAR.

From DARJERLING. DR. A. CAMPBELL.

6489-90. [1765, 8195] Bells.

6491. [3182] Copper vessel.

6492. [3163] 'Mane,' or praying cylinder.

6493. [4273] Model of Llamas' tomb.

6494. [8194] Three Dorjé sceptres.

6495-6. [3167-8] Two pairs Llamas' cymbals.

6497. [4266] Iron spoon, with Dorjé head.

6498. [8196] 'Mane,' or praying wheel, Thibet. INDIA MUSEUM.

6499-6500. [1582-3] Two castings in brass, Maunbhoom, Chota Nagpore. PROF. THOS. OLDHAM.

These specimens are interesting, not from the size or beauty and high finish of the workmanship, but from the ingenuity displayed in the mode of casting articles of this kind in hollow net work, &c. This is accomplished as follows:—

A core is made of plastic clay, all carefully shaped to the internal form of the fish or other object to be imitated. This core is then baked and indurated. On this, the pattern designed to be represented is formed with wax (ordinary clean bees' wax is used). This done, and the wax having cooled, it becomes tolerably hard.

NATIONAL ARCHIVES OF INDIA

Soft clay is moulded over all. The whole is then baked, the heat indurating the outer coating of clay, but softening the wax, which all runs out of the mould, leaving empty the space occupied by it. The mould being sufficiently dried, the molten brass is then poured into the empty space, and, when cool, the clay is broken away, when the result is as exhibited. These are untouched after the casting, excepting on the smooth and flat surfaces, which are roughly filed.

These sell in the district at sixpence to one shilling each, and are used and hung from the neck or waist as boxes for tobacco, pân, &c.

6501. [996] Eleven pairs metal bangles, Jhansi. GOVERNMENT of INDIA.

From RANGOON. Messrs. HALLIDAY, FOX & Co.

6502. [2297] Two Burmese spoons.

6503. [2299] Tattooing implement.

6504. [4476] Areca nut crushers.

6505. [4479] Tweezers.

6506. [6358] Tin cup and stand, and goglet and stand, Malacca. HON. CAPTAIN BURN.

These are illustrative of the tin ore series exhibited by CAPT. BURN, in Class I.

From N. ARCOT, MADRAS. GOVERNMENT of MADRAS. Manufacturers, SWARAMMUDU VENGUBATHUDU, and KALAPA.

6507. [10568] Cup, small, engraved, 'Jambu.'

6508. [10569] Cup, large, engraved.

6509. [10570] Cup, small, engraved.

6510. [10571] Jug, engraved.

A variety of metal idols from North Arcot have been deposited at the India Museum.

From TANJORE. W. M. CADELL, Esq.

6511. [590] Goglet, metal, Tanjore.

6512. [591] Wine-glass, metal, and cover.

6513. [592] Tumbler, metal.

6514. [7998] Fishing reel, made by BOODRAJ, a native smith, at Aurungabad, Deccan. DR. RIDDELL.

6515. [1059] Rose-water sprinkler, Hyderabad. GOVERNMENT of BOMBAY.

CLASS XXXII.—STEEL, CUTLERY, AND EDGE TOOLS.

6516. [1078] Pen-knife, Hyderabad.

From SALEM, MADRAS. GOVERNMENT of MADRAS. Manufacturer, BABOO ARNACHELLUM.

6517. [10591] Three hunting knives and leather cases.

6518. [10593] Bread knife.

6519. [10595] Two table knives.

6520. [10592] Two spear heads and sheaths.

6521–4. [10596–9] Garden scissors.

6525. [10600] Pocket knife.

6526. [10594] Turnscrew.

6527. [6514] Four knives, Assam. LIEUT. W. PHAIRE.

NATIONAL ARCHIVES OF INDIA

CLASS XXXIII.—WORKING IN PRECIOUS METALS

AND IN THEIR IMITATIONS; JEWELLERY, AND ALL ARTICLES OF VERTU AND LUXURY NOT INCLUDED IN THE OTHER LISTS.

The value of the articles of this class exported from India up to the present time will be gathered from the Table below.

TABLE SHOWING THE VALUE OF JEWELLERY EXPORTED FROM INDIA AND EACH PRESIDENCY TO ALL PARTS OF THE WORLD FROM 1857–58 TO 1860–61.

YEARS	WHENCE EXPORTED	COUNTRIES WHITHER EXPORTED							TOTAL EXPORTED TO ALL PARTS
		UNITED KINGDOM	FRANCE	OTHER PARTS OF EUROPE	AMERICA	CHINA	ARABIAN AND PERSIAN GULFS	OTHER PARTS	
		Value	Value	Value	Value	Value	Value	Value	Value
1857-58	Bengal	£ 1,433	£ 334	£ ..	£ ..	£ 567	£ ..	£ 803	£ 3,137
	Madras	1,299	9	..	..	34	..	377	1,719
	Bombay	40	78	..	..	43	858	1,459	2,478
	ALL INDIA	2,772	421	..	..	644	858	2,639	7,334
1858-59	Bengal	2,583	300	..	..	17	..	2,089	4,989
	Madras	1,221	..	..	..	..	..	286	1,507
	Bombay	102	20	..	10	182	1,241	1,162	2,717
	ALL INDIA	3,906	320	..	10	199	1,241	3,537	9,213
1859-60	Bengal	356	..	..	13	..	..	1,495	1,864
	Madras	1,538	..	..	..	..	..	377	1,915
	Bombay	139	20	..	..	44	256	2,366	2,825
	ALL INDIA	2,033	20	..	13	44	256	4,238	6,604
1860-61	Bengal	656	5	214	..	53	..	3,658	4,586
	Madras	1,893	200	..	..	..	..	329	2,422
	Bombay	287	12	..	..	615	889	1,871	3,674
	ALL INDIA	2,836	217	214	..	668	889	5,858	10,582

ARTICLES OF GOLD AND SILVER, ETC.

a. Works in Gold.

6528–9. [2257–8] Two gold bracelets, Madras. T. CHOCALINGUM, jeweller.

6530. [5255] Two gold bracelets. HENCKELL, DU BUISSON & Co., for MOOTIANASSARY, jeweller, *Trichinopoly.*

From TRICHINOPOLY. MADRAS GOVERNMENT. ROSALINGUM ASSARY, jeweller.

6531. [2264] Two gold bracelets and three tassels.

6532. [2265] Bangle, lion's head, gold.

6533. [2266] Bangle, snake's head.

6534. [2267] Bracelet, ball.

6535. [2268] Bracelet, rose snake.

6536. [2269] Filigree snake bracelet.

6537. [2270] Bracelet, smooth snake, gold.

6538. [2271] Chain rose, gold.

6539. [2272] Chain bobbin.

6540. [2273] Chain tape.

6541. [2274] Brooch Sawmi.

6542. [2275] Studs and sleeve links.

6543. [2276] Brooch, elephant.

6544. [2277] Bracelet.

6545. [2278] Bracelet, elephant.

6546. [2279] Bracelet, with three tassels.

6547. [2280] Two puzzle rings.

6548. [2281] Brooch, snake.

6549. [2282] Brooch, with painting of Trichinopoly Rock.

6550. [2287] Bracelet, gold, and beads.

NATIONAL ARCHIVES OF INDIA

6551–5. [6776–80] Four thimbles, gold, Kutch. H.H. the RAO.

6556–7. [1062–63] Two scent bottles, Hyderabad. GOVERNMENT of BOMBAY.

6558. [3096] Necklace.

6559. [3097] Pair bracelets, gold.

6560. [3098] Nose ring.

6561. [3099] Pair earrings.

6562. [3100] Head button, gold.

Set of jewels worn by females, Ulwar. H. H. the MAHARAJAH.

6563. [2763] Head ornament, gold, set with rubies. SIR R. HAMILTON, Bart.

Worn by Mahratta ladies.

6564. [2764] Pair earrings, gold, emeralds and pearls, Bhopaul.

Worn by Mahomedans.

6565. [2765] Pair earrings, gold, emeralds and rubies.

Worn by Mahomedans.

6566. [2766] Pair earrings, gold, pearls, emeralds, and rubies, Oossein.

Worn by Hindoos.

6567. [2767] Pair earrings, enamel and pearls, Oossein.

Worn by Mahratta ladies.

6568. [2768] Pair earrings, gold, Indore.

Worn by Hindoos.

6569–70. [2769–70] Two pair earrings, enamel and pearls.

Worn by Mahratta ladies.

6571. [2771] Pair earrings, pearls, emeralds, and rubies.

Worn by Mahratta ladies.

6572. [2772] Pair earrings, pendant, emeralds and pearls, Delhi.

6573. [2773] Nose ornament, gold and pearls, Indore.

6574. [2774] Nose ornament, gold, pearls, and diamonds, Delhi.

6575. [2775] Head ornament, gold, enamel, pearls, and emeralds, Madras.

6576. [2776] Necklace, gold enamelled, 64 pearls, 29 rubies, 4 emeralds, Indore.

6577–8. [2780–1] Two bracelets, massive gold, Mahratta.

6579. [2782] Bangle, gold, Hindoo.

6580. [2783] Rings for the toes, gold.

6581. [2784] Spice box, pendant, gold, rubies, and emeralds, Bhopaul.

6582. [2785] Betel-cutter and box for lime, gold, Hindoo.

6583–4. [2786–7] Two gold armlets.

6585. [2788] Two curious gold rings, Umferah.

Nos. 6563 to 6585, inclusive, exhibited by SIR R. HAMILTON, Bart.

Nos. 6586 to 6602, manufactured by HURRUCK CHUND, jeweller, DELHI.

6586. [3065] Bracelet, gold, Babool work, six pieces, Delhi. HURRUCK CHUND, jeweller.

6587. [3066] Bracelet, gold, light ornamental.

6588. [3067] Brooch, gold, and large amethyst.

6589. [3068] Brooch, gold, circular, with pearls.

6590. [3069] Brooch, gold, circular, and painting on ivory of Kotoob Minoar.

6591. [3070] Brooch, gold, and painting on ivory of Sufdar Jhung's tomb.

6592. [3071] Brooch, light gold work, rubies and pearls.

6593. [3072] Brooch, gold, topaz, and carbuncle.

6594. [3073] Brooch, gold, filigree, turquoise, and pearl.

6595. [3074] Brooch, gold, sword-shaped.

6596. [3075] Brooch, light gold, crescent-shaped, turquoise.

6597. [3080] Pair of bracelets, carbuncle and turquoise, nine pieces each.

6598. [3086] Brooch, gold, and five large carbuncles.

NATIONAL ARCHIVES OF INDIA

6599. [3087] Brooch, gold, and pendants.

6600. [3088] Brooch, small square, four pearls and turquoise.

6601. [3089] Cornelian cross.

6602. [3090] Gold breast pin.

6603. [3113] 'Surpech,' 175R., Benares. CHOONEE LALL.

6604. [3105] Necklace or garland of pearls, 350R., Benares. CHOONEE LALL.

6605. [3114] 'Dusta' or bracelet, 100R., Benares. BUKHTA DUR SINGH.

6606. [3076] Pair gold bracelets, Babool-work, Delhi. JOWALLIE SHAW.

6607. [3077] Bracelet, gold and amethyst.

6608. [3078] Bracelet, gold, with paintings on ivory.

6609. [3079] Bracelet, gold, turquoise.

6610. [3081] Bracelet, gold, Babool work.

6611. [3082] Four brooches, gold, crescent-shaped.

6612. [3083] Brooch, gold, Babool pattern.

6613. [3084] Earrings, (one pair).

Nos. 6606 to 6613, manufactured by JOWALLIE SHAW, *Delhi.*

6614. [3054] Bracelet, gold filigree, with onyx, five pieces, Delhi. BHYARO DOSS.

6615. [3055] Bracelet, gold and turquoise.

6616–7. [3056–7] Two bracelets, gold filigree, topaz, and small stones.

6618. [3059] Brooch, gold and turquoise.

6619. [3060] Brooch, gold, double crescent, with turquoise.

6620. [3062] Small turquoise, with locket.

6621. [3064] Bracelets, gold and turquoise.

6622. [3091] Brooch, gold and turquoise.

6623–4. [3093–4] Six small turquoise crosses.

6625. [3095] Brooch, horse-shoe pattern.

Nos. 6614 to 6625 contributed by BHYARO DOSS, jeweller, *Delhi.*

6626. [3107] Pair of Bazoo, 85R., Benares. BABOO FUKEER CHAND.

6627. [3108] 'Chumpa Kullee' necklace, 175R.

6628. [3109] Sattara garland of pearls, 325R.

6629. [3110] Pair of earrings, 120R.

6630. [3112] A Bundee, 175R.

6631. [3111] Pair of bracelets, 65R.

Nos. 6626 to 6631 contributed by BABOO FUKEER CHAND, *Benares.*

6632. [3115] Necklace of 122 pearls and emeralds, with diamond and topaz enamelled locket, Lucknow. JNO. MARTIN, Esq., *Calcutta.*

6633. [3116] Finger ring, gold, with an emerald, with Persian inscription, 'Badsha Jhazie Nusserwoollah Hysler Sultan.'

6634. [3117] Finger ring, gold, with 20 diamonds and Persian inscription, 'Ghazie ool Hyderabad Nussera Sultan.'

6635. [3118] Curious pearl with Persian inscription, 'Namee Shah Alum Gheer Bahadur Shah.'

6636. [3119] Two very curious shaped pearls, plain.

6637. [3120] Large pearl, gold mounted and set with rubies and other stones.

Nos. 6632 to 6637 exhibited by JOHN MARTIN, Esq., *Calcutta.*

6638. [3996] Pearl ornament, taken at the capture of Seringapatam. DR. RIDDELL.

6639. [8307] Brooch, gold, aquamarine stone, set in pearls. DR. RIDDELL.

6640. [10291] Pair tiger-claw bracelets, set in gold, Calcutta.

6641. [10290] Pair tiger-claw bracelets, set in gold and turquoise.

6642. [10292] Four pairs earrings, gold.

6643. [10294] Three pairs sleeve links, gold.

NATIONAL ARCHIVES OF INDIA

6644. [10295] Three brooches.

6645. [10296] Three brooches, with turquoises.

6646. [10297] Two breast pins.

6647. [10299] Two vinaigrettes.

Nos. 6640 to 6647 were manufactured by native artists under the superintendence of Messrs. ALLEN & HAYES, Government jewellers, *Calcutta.*

6648. [626] Gold 'Chikoo' ring, Vizagapatam. RAJAH of VIZIANAGRAM.

6649. [8310] Three gold bracelets. J. NEAL, *Edgware Road.*

6650. [1396] Gold schist or archer's thumb ring, inlaid with rubies. COLONEL GUTHRIE.

6651. [1399] Gold enamelled and diamond schist or archer's thumb ring. COLONEL GUTHRIE.

6652. [4278] Gold locket. DR. CAMPBELL.

6653. [4289] Gilt image set in turquoise. DR. CAMPBELL.

6654. [4285] Gilt and malachite locket. DR. CAMPBELL.

6655. [4492] Sapphire ring, Rangoon. Messrs. HALLIDAY, FOX & Co.

6656. [3101] Sapphire ring, Burmah Proper.

6657. [3102] Ruby ring, Burmah Proper.

The ruby and sapphire mines are to the north of Mandalay, the present capital of Burmah. All attempts of Europeans to visit them have hitherto been frustrated by various impediments thrown in their way by the Burmese authorities, who are very jealous of too close a scrutiny into the source of wealth on which they so much pride themselves. Great numbers of these gems are brought down to Rangoon for sale, but a heavy price is always demanded for them, and it requires an experienced eye to purchase them with a view to profit.

Topazes are also found in the vicinity of the rubies and sapphires, but they are scarce, and fetch a higher price in Burmah than they would realise in England.*

b. **Works in Silver.**—Filigree Work, Plate, &c.

6658. [2411] Epergne, double branch, filigree, Cuttack, 599R. 1A. JUGGER NATH Doss, maker.

6659. [2412] Epergne, double branch, Cuttack, 377R. 8A. SEEBOO, maker.

6660. [2413] Epergne, double branch, Cuttack, 285R. 5A. CHOTASEEBOO, maker.

6661. [2414] Jewel casket, filigree, Cuttack, 165R. KUNNYE, maker.

6662. [2415] Basket, filigree, Cuttack, 81R. 4A. SAHOO SONAR RAMCHUNDER, maker.

6663. [2416] Pair of bracelets, filigree, Cuttack, 15R. 15A.

6664. [2417] Pair of bracelets, filigree, Cuttack, 24R. 3A. 6P.

6665. [2418] Brooch, in form of a cross, filigree, Cuttack, 6R. 6A.

6666. [2419] Bouquet holder, filigree, Cuttack, 15R. 15A.

6667. [2420] Ring stand, filigree, Cuttack, 14R. 1A.

The native silversmiths of Cuttack have long been noted for the fineness, neatness, and lightness of their filigree work. This kind of work is executed, for the most part, under supervision, by mere boys, whose nimbler fingers and keener eyesight are supposed to enable them to bring out and put together the minute patterns with more distinctness and accuracy than their elders can; comparative cheapness is, perhaps, another reason for their employment. The ruling rates for this filigree work are from two to two and a half rupees, that is to say, taking the first rate, two rupees or four shillings is charged for every rupee weight of finished silver work, namely, one rupee for workmanship, and one rupee as the price of the silver. This branch of industry is, however, declining from want of sufficient demand. These articles are all of the purest silver. The filigree work in gold seems almost as good as that of Delhi.*

6668. [746] Calcutta trades' plate for 1860–61. G. PLOWDEN, Esq., *Calcutta.*

Manufactured by native artists under the superintendence of Messrs. ALLEN & HAYES, *Calcutta.*

6669–70. [5071–2] Silver vase. RAJAH DEONORAIN SINGH BAHADOOR, *Benares.*

This vase, manufactured by native artists under the superintendence of Messrs ALLEN & HAYES, Government jewellers, *Calcutta*, bears an inscription stating it to have been 'presented to Rajah Deonarain Singh Bahadoor, by His Excellency the Right Honourable the Governor-General and Viceroy of India, for his loyalty and devotion to the British government during the rebellion of 1857.'

6671. [4251] Fountain in massive silver. RAJAH DEONORAIN SINGH BAHADOOR, *Benares.*

6672. [5073] 'The Governor-General's plate,' Calcutta.

6673. [5074] 'The trades' plate,' 1862, Calcutta.

6674–7. [2421–4] Silver salver, claret jug and two cups, presented by Lodge 'True Friendship' to the worshipful Master, Calcutta.

Nos. 6672 to 6677 manufactured by native artists, under the superintendence of Messrs. ALLEN & HAYES, *Calcutta.*

* Local Committee, *Rangoon.*

* Local Committee, *Cuttack.*

NATIONAL ARCHIVES OF INDIA

6678–9. [644–5] Bouquet holder, silver, Bhooj, Kutch. H.H. the RAO of KUTCH.

6680. [647] Salt cellar, silver.

6681. [649] Box of stone, mounted in silver.

The stone of which this box is made was procured from the Hubba Hills, and polished at Bhooj. It is also used as a substitute for marble in the decoration of temples.

6682. [650] Mug, silver.

6683. [655] Bottle labels, wild boars' tusks, silver mounted.

6684–6. [656–8] Salt cellars, silver.

6687–9. [659–61] Muffineers, silver.

6690–1. [663–4] Card cases, silver.

6692–3. [665–6] Two cigar cases, silver.

6694–7. [667–70] Four penholders, silver.

6698–9. [671–2] Two paper-knives, silver.

6700–3. [673–6] Four thimbles, silver.

6704–5. [681–2] Goolabdanees or rose-water sprinklers and trays, silver.

6706–8. [683–5] Toasting forks, of horn and silver.

6709. [687] Silver model of Mahomedan temple, erected over the tomb of SHEEAH MAHOMEDAN, at Bhooj.*

Nos. 6678 to 6709 contributed by H.H. the RAO of KUTCH.

6710. [10032] Utterdan, silver, in the form of a fish. Philibeet. SHEIK BUDROODEN. Aoula.

6711–2. [3122–3] Betel boxes, filigree work, Nepaul. SIR JUNG BAHADOOR, K.C.B.

6713–4. [5226–7] Snuff boxes, Trichinopoly.

6715–7. [5228–30] Cigar cases.

6718–23. [5231–6] Six cigar lighters.

Nos. 6713 to 6723 exhibited by Messrs. HENCKELL, DU BUISSON & Co., for MOOTIANASSARY, jeweller, *Trichinopoly.*

6724. [2291] Cannon faleta, silver, 24R. 6A., Trichinopoly. RASALINGUM ASSARY.

6725. [2283] Hair pins, silver filigree, 12R. 7A.

6726. [2284] Bracelet, filigree, ball, 13R. 14A.

6727. [2285] Bracelet, filigree, flat, 18R. 8A.

6728. [2286] Bracelet, filigree, ball, 10R. 10A.

6729. [2290] Silver purse, 38R. 8A.

6730. [2292] Cheroot case, 70R.

6731. [2288] Card case, 25R.

Nos. 6724 to 6731 manufactured by RASALINGUM ASSARY, *Trichinopoly.*

6732. [10662] Casket, filigree, Vizagapatam.

6733–4. [10663–4] Two pair of bracelets.

6735. [10665] Necklace, beads and silver.

Nos. 6732 to 6735 exhibited by GAJAPATI, RAO of *VIZAGAPATAM.*

6736–7. [2259, 2293] Six dessert spoons, silver, 200R., Madras. T. CHOCALINGUM.

6738. [2260] Six table spoons, 135R.

6739–40. [2261, 2294] Six tea spoons, 100R.

6741. [2262] Two ladles, silver, 30R.

6742–3. [2263, 2289] Bracelet, silver.

Nos. 6736 to 6743 manufactured by T. CHOCALINGUM, jeweller, *Madras.*

6744. [1503] Tea pot and stand, Puttiala. H.H. the MAHARAJAH.

6745. [4277] Butter pot and stand, Puttiala.

6746. [1502] Mug and lid, Puttiala.

6747. [3048] Mango tree, silver, Futtehpore. RAI HALL, *Bahadoor of Jenanabad.*

* A large number of articles in gold and silver are annually made at Bhooj, principally for Europeans. The Goolabdanas, or rose-water sprinklers, are, however, manufactured for native use. The silver and gold used is very nearly pure. The principal artizans are VISHRAM GOLDSMITH, JEWRAM SHAMJEE, and HEERJEE NAGJEE. The charge is at the rate of 8A. per tola weight.

NATIONAL ARCHIVES OF INDIA

6748. [5865] Box, massive silver, gilt inside, and enamelled lid, Lahore. GOVERNMENT of INDIA.

6749. [2898] Spice box or 'Pandan,' Lucknow. SHA MAKHUM LALL, *Mahajaun of Lucknow.*

6750. [2897] Spice box, or 'Ilaeecheedan,' Lucknow. SHA MAKHUM LALL.

6751. [2899] A chased silver box, Burmah. MAJOR T. P. SPARKS, *Rangoon.*

6752. [3434] Two antimony boxes, silver, Umritsur. LALL CHUMBER MULL.

6753. [3435] One antimony box, gilt inside, Umritsur. LALL CHUMBER MULL.

6754. [3439] Three spindles for antimony boxes, Umritsur. LALL CHUMBER MULL.

6755. [3436] Two silver gilt hookah mouthpieces, Umritsur. LALL CHUMBER MULL.

6756–7. [3049–50] Pandan box and plate for holding betel leaf, Futtehpore. LALLA THAKOOR PERSHAD.

6758–9. [3130–1] Six silver politas, Calcutta. GOVERNMENT of INDIA.

6760. [3437] Five wild boars' tusks, mounted in silver as bottle labels, Umritsur. A. M. DOWLEANS, Esq.

6761. [3121] An antique vase of silver, exhibiting the twelve signs of the Zodiac, in basso relievo, and supported by the shield of a Burmese warrior, Ava. JOHN MARTIN, Esq., *Calcutta.*

6762. [5754] Ink and pen tray, glass, silver mounted, Meerut. KOOER WUZEER ALLY KHAN, *Meerut.*

6763. [8298] Basket, filigree work. Imported by J. NEAL, *Edgware Road, London.*

6764. [8298] Bracelets, filigree. J. NEAL, *London.*

6765–8. [7811–4] Four silver bottles for attar of roses, Jeypore. H.H. the MAHARAJAH'S distillery.

6769. [1061] Ten enamelled buttons, Hyderabad, Sinde.

6770–1. [1062–3] Two scent bottles, Hyderabad, Sinde.

6772. [7850] 'Goolabdanee,' or rose-water sprinkler. JHEND.

6773. [7851] Peacock. JHEND.

6774–5. [7852–3] 'Goolabdanee,' or sprinkler and tray. JHEND.

6776. [7854] Pair bracelets. JHEND.

6777. [4279] Locket, silver, Darjeeling. DR. CAMPBELL.

6778. [4282] Bootanese bangles, silver.

6779. [4284] Silver locket necklace.

6780. [4283] Silver chain cloak clasp.

6781. [4287] Silver earrings, as worn by the Tumboo tribe.

6782. [4288] Silver locket.

Nos. 6777 to 6782 exhibited by DR. CAMPBELL, *Darjeeling.*

6783. [3106] Pair bracelets, silver filigree, Banda. SETH OODEY KURI.

6784–6. [2793–5] Ornaments for the feet, silver, Hindoo. SIR ROBT. HAMILTON, Bart.

6787. [2792] Three bangles.

6788. [2791] Anklets.

6789. [2790] Armlets.

6790. [2789] Pair bracelets.

Nos. 6784 to 6790 exhibited by SIR R. HAMILTON, Bart.

6791. [4280] Cloak clasp, silver and malachite, Darjeeling. DR. CAMPBELL.

6792. [4281] Silver locket and coral necklace.

6793. [4290] Earrings, malachite.

6794. [4291] Earring, malachite, silver and coral.

6795. [4292] Earrings, silver and coral, worn by the Tumboos.

6796–7. [4294, 4305] Gentleman's earring.

Nos. 6791 to 6797 exhibited by DR. CAMPBELL, *Darjeeling.*

6798–9. [3103–4] Two pairs agate bracelets, mounted in silver, Banda. GOVERNMENT.

6800. [8309] Knife handle.

COINS.

6801. [906] Large gold coin (weight 4 tolas, 21 wals), and 2 silver rupees, Ahmedabad. NUGGER SHET PREMABHAEE HEMABHAEE.

The gold coin is of the 7th year of Akbar of Agra, and the rupees of the year 1028, Izree.

NATIONAL ARCHIVES OF INDIA

6802. [907] Square gold coin, period of MAHOMED AHUNSHAR, Ahmedabad. NEKNAMDAR SUKAWATTEE SHETANEE HURKOOVURBHAEE.

6803. [908] Three silver and one copper coin, Ahmedabad. RAO BAHADOOR, SHET MUGGUNBHAEE KRAMCHAND.

6804. [8250] Cashmere rupee, coined by the late MAHARAJAH PUTAB SINGH, bearing a Christian cross, and the letters, 'J. H. S.'

These rupees were first coined in 1849, shortly after the annexation of the Punjaub, when the Maharajah was very anxious to show his loyalty in a way which he supposed likely to be most gratifying to a Christian Government. Exhibited by SIR J. LOGAN.

6805. [3126] Silver bullion 'Daing,' Burmah.

6806. [3127] Silver bullion 'Ban,' Burmah.

6807. [3128] Silver bullion 'Govetnee,' Burmah.

The currency of Burmah Proper, and formerly of Pegu, until the British conquest, when the Indian coinage supplanted it.*

6808. [4299] Five Thibetan coins, Darjeeling. DR. CAMPBELL.

c. Enamelling and Damascene Work, etc.

Enamelling on Gold and Silver.

6809. [10286] Gold enamelled pân box, Jeypore. H.H. the RAJAH.

6810. [10287] Gold enamelled vase and cover.

6811. [10288] Pair of enamelled and diamond bracelets.

6812. [10289] Jewel-enamelled ankus or elephant spear.

Nos. 6809 to 6812, contributed by H. H. the RAJAH of JEYPORE.

6813. [1059] Goolabdanee or rose-water sprinkler, enamelled, Hyderabad. GOVERNMENT of BOMBAY.

6814. [1060] Covered dish, Hyderabad. GOVERNMENT of BOMBAY.

The following note on the enamelled work of India is by A. M. DOWLEANS, Esq:—

The finest enamelled work of India is produced in the independent Rajpootana state of Jeypore, and considered of great artistic merit. The enamellers came originally from Lahore. The enamel is a kind of glass made in earthen vessels, and when fused the colouring matters are added; the whole is then allowed to cool, and in this state is kept for use. Only pure silver or gold articles are enamelled. From the silver, the enamel may come off in course of time; but it never does from the gold. All good enamel is consequently only applied to gold, which must be free from alloy, or otherwise it would tarnish by contact with the enamel in the great heat to which it is subsequently exposed. The gold is first carved of the required pattern: the enamel, having been ground to an impalpable powder, and made into a paste with water, is then placed on the exact spot required by the pattern. The article is then strongly heated, much skill being required to take it out at the precise moment when the enamel is thoroughly fused, but before the colours begin to run into one another. As soon as removed, the workmen then exert the full power of their lungs in blowing upon it as quickly and as violently as possible. The hardest colours are first placed in the furnace and fused, and then those which melt more easily. Afterwards, the whole is ground and polished. The enamelled work of Jeypore is very highly valued, and can only be procured through H.H. the RAO of JEYPORE himself, by whom the workmen are employed. The artisans themselves form a small family, and the real process of enamelling is kept by them as a secret, which descends from father to son like an heirloom.

Enamelling, as applied to jewellery, consists of an extremely fine pencilling of flowers and fancy designs in a variety of colours, the prevailing ones being white, red, and blue, and is invariably applied to the inner sides of bracelets, armlets, anklets, necklaces, earrings, surpezes, tiaras, and all that description of native jewellery, the value depending upon the fineness of the work, and often exceeding that of the precious stones themselves. In general the cost is moderate, as the finest specimens are only made to order. The best come from Benares, Delhi, and the Rajpootana states.

The manufacture of enamels on articles of domestic use like the above is almost entirely restricted to Hyderabad. It presents no varieties, but in general consists of a blue coating interlined with white on a surface of silver, and is applied to rose-water sprinklers, spice boxes, basins, and such like articles. The merit of the manufacture lies in the simplicity of the enamel itself, and in the lightness of the silver article to which it is applied. Though pleasing, it is the coarsest enamel produced in India.

Bidri Ware, Composition Metal inlaid with Silver.

6815. [5218] 'Chillumchee,' or spittoon, and cover, inlaid Bidri ware, Purneeah. GOVERNMENT of INDIA.

6816. [5795] Water bottle.

6817–8. [5796–7] Hookah bottom.

Bidri, or Biddery ware, derives its name from Bider, a city situated about 60 miles to the N.W. of Hyderabad. It is a species of inlaid ware of excellent form and graceful pattern. The stages of the manufacture are as follows:—

A mass of finely-powdered and sifted old laterite dust mixed with cow-dung is put upon a rude lathe, and when dry, carefully turned to the correct shape. The model having been smoothed with a chisel, is next covered with a mixture of wax and oil boiled together; when dry, the whole mass is carefully smoothed and turned. Over this coating is plastered a second layer of laterite dust, moistened with water alone; this coat is rough, and not subsequently smoothed down. The next stage consists in boring two openings in the composite mould, and placing it in the fire, the effect of which is to melt the intermediate layer of wax, and thus to leave a vacant space for the reception of the alloy. Into this space is poured the alloy, consisting of 1 part of copper and 4 parts of pewter.*

* Local Committee, *Rangoon.*

* The metal employed for the groundwork of the 'Bidri ware' is stated by DR. HAMILTON to consist of

NATIONAL ARCHIVES OF INDIA

This vessel has now a dull leaden look; it is hard, but easily cut. This shell, as it may be called, is carefully turned, and upon its smooth surface the pattern is traced by hand. This tracing is done rapidly. The workman next takes a small chisel and hammer, and, following the lines of the pattern, cuts it deeply and expeditiously, scooping out the tracings of the little leaves, &c., and leaving an indented, but rough surface. This rough surface is next smoothed down by hammering gently with a blunt-pointed chisel, and the space is then ready for the process of inlaying. Thin plates of very pure silver are then taken, and the little leaves (or other patterns) are cut out with a small hammer and chisel; each little leaf is then raised separately by the chisel and finger tip, and hammered gently but carefully into the depression intended for it. This part of the process is tedious. In the more durable kinds of Bidri ware, silver wire is substituted for silver leaf. The vessel in this state is rough, and requires smoothing; this is done with a common file and a curved scraper of a rude and clumsy form. The hole in the bottom of the vessel is filled up with lead, and smoothed down. Finally, the vase is gently heated, and, whilst warm, is blackened by the application of a powder (supposed to consist of chalk and sal-ammoniac—chloride of ammonium). This imparts a brilliant black polish to the shell, and careful hand rubbing brings out the polish of the silver.*

Glass inlaid with Gold.

6819. [2777] Pair of bracelets, gold enamelled, Pertaubghur. SIR R. HAMILTON, Bart.

6820. [2778] Necklace. SIR R. HAMILTON, Bart.

6821. [2779] Five gold enamelled tablets for bracelet. SIR R. HAMILTON, Bart.

The manufacture is peculiar to Indore, in Central India, but it does not constitute a regular trade. It is invariably applied to articles of personal decoration, such as necklaces, armlets, brooches, earrings, &c., which are set by native jewellers, according to the taste of the purchaser. These subjects generally consist in a representation of the avatars, or pictures of the metamorphoses of Indian deities; and the work is so perfect that it will stand, not only the influence of climate, but even rough handling.

The specimens of this kind of work have no fixed market value, and the price is, therefore, entirely dependent upon the number of competitors that may be in the field when any of them are offered for sale. A set of these ornaments, consisting of a necklace, earrings, two armlets, and a brooch, in plain gold, contributed to the Exhibition of 1851, was valued at 1,700R., or 170*l*. A duplicate, forwarded to the Paris Exhibition in 1855, was purchased for 600R., or 60*l*.

Koftgari Work or Steel inlaid with Gold.

6822–4. [5861–3] Caskets of Koftgari work, or steel inlaid with gold, Lahore.

6825. [5864] 'Kalamdan,' or pen case, inlaid with gold, Lahore.

6826–7. [5866–7] Pen trays, Lahore.

6828–31. [5868–71] Paper weights, Lahore.

6832. [5872] Paper knife, Lahore.

6833. [5873] Sword hilt, Lahore.

Koftgari work, or steel inlaid with gold, has, in former days, been carried on to a considerable extent in various parts of India. It was chiefly used for decorating armour; and among the collections exhibited on the present occasion, are some very fine specimens of guns, coats of mail, helmets, swords, and sword handles, to which the process of koftgari has been successfully applied. These specimens, however, are not the manufacture of the present day. Since the late rebellion in India, the manufacture of arms has been generally discouraged, and Koftgari work is, consequently, now chiefly applied to ornamenting a variety of fancy articles, such as jewel caskets, pen and card trays, paper weights, paper knives, inkstands, &c. The process is exactly the same as that pursued in Europe, and the workmen can copy any particular pattern required. The work is of high finish, and remarkable for its cheapness.*

Koftgari is chiefly carried on in Goojerat and Kotli, in the Semkote district. It was formerly much in vogue for decorating armour and the blades and hilts of swords, but the artisans now confine themselves chiefly to the manufacture of ornamental paper knives, &c. The specimens above mentioned have been contributed by the Kotli artisans.†

Several admirable specimens of inlaid metal work by the native artisans of Bhooj will likewise be found in the collection of arms contributed by H.H. the RAO of KUTCH.

ARTICLES OF VERTU NOT INCLUDED IN THE PREVIOUS ENUMERATION.

a. Jade and Rock Crystal.

The following very fine collection of articles in jade are forwarded for exhibition by COLONEL GUTHRIE, *Calcutta.*

6834. [1342] Long box and top, jade, both gold inlaid, Calcutta.

6835. [1418] Leaf-shaped box, jade, inlaid with gold.

6836. [1417] Carved octagon box and top, jade, jewelled.

6837. [1375] Straight octagon box, jade, jewelled.

6838. [1369] Pen box and top, jade, jewelled, with six fittings all jewelled, viz. 2 ink bottles, 1 penknife, 1 pen rubber, 1 pencil, and 1 spoon.

6839. [1370] Small trefoil-shaped box and top, jade, jewelled.

zinc 12,360 grains, copper 460 grains, and lead 414 grains, melted together, a mixture of resin and bees' wax being introduced into the crucible to prevent calcination. DR. HAYNE states that it is composed of copper 16 oz., lead 4 oz., tin 2 oz., and that to every 3 oz. of this alloy, when melted for use, have to be added 16 oz. of zinc.

* The foregoing description of this interesting manufacture is chiefly taken from an article by DR. GEORGE SMITH in the *Madras Journal of Literature and Science* for October, 1856.

* A. M. DOWLEANS, Esq.
† Central Committee, *Lahore.*

NATIONAL ARCHIVES OF INDIA

6840. [1338] Leaf-shaped box and top, jade, carved in relief.

6841. [1335] Large pen box and top, jade, carved in relief.

6842. [1371] White jade cup, 498 jewels, $5\frac{5}{8}$ diameter, exclusive of handles.

6843. [1372] Green jade bowl, with handles.

6844. [1373] White jade bowl, with handles.

6845. [1411] Pure white jade abcorah, with handles.

ARTICLES IN JADE, FORMING PART OF THE COLLECTION EXHIBITED BY COLONEL GUTHRIE.*

6846. [1340] Jewelled jade abcorah, with handles.

6847. [1376] Grey jade abcorah and top, with handles.

6848. [1412] White jade jug, with handles and gold rim.

6849–50. [1353, 1428] White jade bowls, very thin, carved in relievo.

6851. [1427] Very remarkable thin cup, jade, carved all over.

6852. [1429] Thin green jade bowl, carved all over.

6853. [1377] Small oval greenish jade cup, with duck's head handles, jewelled eyes.

6854. [1424] Small green jade cup, with handles.

6855. [1430] Jade cup.

6856. [1431] Jade cup, very thin.

6857. [1354] Jade cup.

6858. [1355] Jade saucer.

6859. [1356] Small plain jade cup.

6860. [1374] Large coarse jade bowl, with handles.

6861. [1426] Green jade dwat, or ink bottle, carved in relief.

6862. [1432] Very thin jade saucer.

6863. [1341] Jade jug, with handle and top.

6864. [1416] Jade jug, with handles.

6865. [1380] Yak chowrie, with jade handle.

6866. [1346] Green jade hilt, prepared for inlaying.

6867. [1413] White jade handle, in two parts.

6868. [1347] Handle, carved in relief.

* From the Mechanics' Journal record of the Exhibition, 1862.

NATIONAL ARCHIVES OF INDIA

6869. [1348] Large blueish jade handle carved in relief, Calcutta. COL. GUTHRIE.

6870. [1414] Very fine white jade hilt, two onyx girdles.

6871. [1415] Hilt and two scabbards, black, inlaid with white jade and rubies.

6872. [1420] Hilt, jewelled, greenish.

6873. [1396] Gold schist, or archer's thumb ring, inlaid with rubies.

6874. [1397] Jade white schist, inlaid with rubies and emeralds.

6875. [1398] One jade schist, prepared for inlaying.

6876–9. [1357–1360] Four plain schists, or archers' thumb rings.

6880. [1399] Gold enamelled diamond schist, or archer's thumb ring.

6881. [1400] White jade schist, jewelled, 30 rubies, 9 emeralds.

6882. [1401] White jade schist, jewelled, 13 rubies, 7 emeralds.

6883–4. [1402–3] Two schists, jade, prepared for inlaying.

6885. [1404] Silver enamelled schist, or archer's thumb ring.

6886. [1405] White jade schist, jewelled, 12 emeralds, 1 diamond.

6887. [1409] Five jade finger rings.

6888. [1366] White jade top for stick, jewelled.

6889. [1350] Green jade top for stick, carved in relief.

6890. [1351] Black stone top for stick, jewelled.

6891. [1425] Small white jade cup, jewelled, 12 jewels.

6892. [1419] Jade inlaid hookah bottom.

6893. [1406] White jade schist, or archer's thumb guard, 20 rubies, 2 emeralds.

6894–5. [1407–8] White jade schist prepared for inlaying.

6896. [1336] Pair white jade bangles.

6897. [1364] Jade hookah mouthpiece, jewelled. Calcutta. COL. GUTHRIE.

6898. [1365] White jade mouthpiece.

6899. [1389] Green jade pierced-work mirror.

6900. [1361] Small jewelled jade round mirror.

6901. [1362] Jade 'Nyad Allee' or charm, jewelled, 6 diamonds, 30 rubies, 1 emerald.

6902. [1363] Jade jewelled charm, 25 rubies, 6 emeralds.

6903. [3244] Jade box, set in gold, with rubies, Umritsur. RAI NURSING DOSS.

A valuable relic of one of the rulers of Cabul.

6904. [1422] A jade charm, plain, Lahore. GOVERNMENT of INDIA.

6905. [1423] Jade charm, set in gold, Lahore. GOVERNMENT of INDIA.

6906. [3124] A pair of bangles, a fine specimen of jade. GOVERNMENT of INDIA, *per* LOCAL COMMITTEE, *Rangoon.*

These bangles are made of jade from Mogoung, in the north of Burmah. The bright green tint seen in these specimens is the characteristic peculiarity of the Burmese jade, or precious serpentine. The Chinese have a perfect mania for it, using it for Mandarins' buttons, pipemouth pieces, and various articles of personal ornament and luxury. They estimate it according to the purity of the white and brightness of the green tints.

These bangles, though of good quality (they cost 125R. or 12*l.* 10s., and were obtained from the owner with difficulty even at that price), are by no means of the finest description.

The Chinaman who sold the bangles showed the Committee a specimen which he assured them would fetch in China sixty times its weight in silver, and that the really first-rate is sold for as much as forty times its weight in gold; this appears incredible, but all enquiry tends to show that the Chinese will give almost anything for fine jade.*

Nos. 6907 to 6923 form a collection of articles in rock crystal, exhibited by COLONEL GUTHRIE, Calcutta.

6907. [1337 Rock crystal water pot and top spout, out of the same piece, Calcutta. COL. GUTHRIE.

6908–9. [1391–2] Two pairs rock crystal spoon bowls, one ribbed, one leaf-shaped, with handles.

* Local Committee, *Rangoon.*

NATIONAL ARCHIVES OF INDIA

ARTICLES IN ROCK CRYSTAL, FORMING PART OF THE SERIES EXHIBITED BY COLONEL GUTHRIE.*

6910–1. [1378–9] Two pairs rock crystal spoon bowls, carved in relief. Calcutta. COL. GUTHRIE.

6912. [1352] Rock crystal melon-shaped bowl and top.

6913. [1393] Rock crystal hilt, diamond cut.

6914. [1421] Rock crystal hilt, carved in relief.

6915. [1394] Rock crystal hilt, inlaid.

6916. [1395] Rock crystal hilt, carved in relief.

6917. [1410] Rock crystal, carved in relief.

6918. [1390] Large plain bowl, with handles.

6919. [1367] Bowl, octagon fluted.

6920. [1368] Small mounted vase, with handles.

6921. [1339] Vase, without handles.

6922–3. [1433–4] Two pairs crystal handles.

b. Cornelian, Agate, etc.

6924. [5483] A cup of stone, called Zahmora, Cashmere. GOVERNMENT of INDIA, *per* LAHORE COMMITTEE.

6925. [2138] Four necklaces of cornelian, Lahore. SOBORHAM, maker. GOVERNMENT of INDIA, *per* LAHORE COMMITTEE.

From Jubbulpore. GOVERNMENT of INDIA.

6926–7. [989–90] Two specimens of fortification agate, Jubbulpore. GOVERNMENT of INDIA.

6928. [991] Five brooch stones, moss agates.

6929. [992] Three specimens of moss agate pebbles.

6930. [993] Three specimens of bloodstone.

6931. [994] Two specimens of cornelians.

From BANDA. GOVERNMENT of INDIA.

6932. [10273] Specimen of jasper (worked), Banda. GOVERNMENT of INDIA.

6933–4. [1436–51] Two dozen knife-handles, jasper.

6935–6. [1448–9] Two paper weights, of jasper and Goodurrea stones.

6937. [1455] Jasper brooch-stone.

6938. [1435] One dozen knife-handles, agate.

6939. [1437] Grass agate.

6940. [1440] Fourteen stones for agate bracelets.

* Lent by J. H. JOHNSON, Esq.

NATIONAL ARCHIVES OF INDIA

6941–3. [1441–2–4] Agate stones for bracelets, Banda. GOVERNMENT of INDIA.

6944. [1445] Paper-knife, agate.

6945. [1446] Brooch-stone, agate.

6946. [1447] Paper-knife, agate.

6947. [1456] Six sets shirt-studs, agate.

6948. [1457] Twenty stones for sleeve-links (five pairs), agate.

6949–51. [10274–6] Agates, 4 stones.

6952. [1453] Brooch-stone, bloodstone.

6953. [1452] Four brooch-stones, Lapis Lazuli.

6954. [10267] Map-stone, rough and polished specimens, from the Kane River.

6955. [4303] An agate schist, or archer's thumb-guard, Darjeeling. DR. CAMPBELL.

6956. [995] Specimen of agate, Guzerat. GOVERNMENT of INDIA, *per* CALCUTTA COMMITTEE.

From CAMBAY, GUZERAT. GOVERNMENT of BOMBAY.

6957. [1102] Twelve crotchet needles, of various stones, Cambay, Guzerat. GOVERNMENT of BOMBAY.

6958. [1103] Ten paper-knives.

6959–60. [1104–5] Two cups and saucers, agate.

6961. [1106] Seven sets waistcoat buttons, do., set in silver.

6962. [1107] Three sets waistcoat buttons, set in gold.

6963. [1108] Ten pairs sleeve-links, set in gold.

6964. [1109] Twenty-four brooch-stones.

6965. [1110] Six doz. knife-handles.

6966. [1111] Ten crystal stones.

6967–8. [1112–3] Agate slabs.

6969. [1114] Agate slabs, with two side-pieces.

6970. [1115] Three pairs agate slabs.

6971. [1116] One pair agate slabs.

6972. [1117] Thirty-four agate stones for bracelets, Cambay, Guzerat. GOVERNMENT of BOMBAY.

6973. [1118] Three pairs round beads, agate, for bracelets.

6974. [1119] One bracelet, black stones.

6975. [1120] Five pairs bracelet-stones, various colours.

6976. [1121] Ten cigar-holders, agate.

6977. [1122] Cup and saucer, agate.

6978. [1123] Six rulers, various colours.

6979. [1124] Twelve sets shirt-studs, various colours.

6980. [1126] Two sets bracelet-stones.

From RANGOON. Messrs. HALLIDAY, FOX & Co.

6981. [4489] Pair serpentine earrings, Rangoon.

6982. [4450] Bracelet.

6983. [4493] Stone earrings, set in horn.

c. Personal Ornaments in Tinsel, Ivory, Horn, Hair, etc.

6984. [2908] Tinsel box, Lucknow. SHEIK HASSAIN KHAN.

6985. [2909] Bracelets of tinsel, Lucknow. SHEIK HASSAIN KHAN.

6986. [2910] Bracelet or necklet of tinsel, Lucknow. SHEIK HASSAIN KHAN.

6987. [2911] Earrings of tinsel, Lucknow. SHEIK HASSAIN KHAN.

6988. [2912] Ticklees or face ornaments, as used by native females, Patna. GOVERNMENT of INDIA.

6989. [5755] Bangles of hair, Meerut. GOVERNMENT of INDIA.

6990. [10047] Bangles of porcelain, Moonghyr. DR. SUTHERLAND.

6991–2. [7885–6] Bangles and rings of glass, Poonah. GOVERNMENT of BOMBAY.

6993. [5153, 8109] Necklaces of horn, Moonghyr. GOVERNMENT of INDIA.

NATIONAL ARCHIVES OF INDIA

6994–5. [5154, 8110] Bracelets, horn, Moonghyr. GOVERNMENT of INDIA.

6996. [7999] Bangles for the wrists and ankles, Moonghyr. GOVERNMENT of INDIA.

6997. [3432] Four and half doz. buttons, ivory, Umritsur. GOVERNMENT of INDIA.

6998. [3433] Three doz. buttons and studs, ivory, Umritsur. MISSUR GEMA CHUND.

CLASS XXXV.—POTTERY.

Although some of the specimens of pottery are very creditable, especially in the accuracy of their shape, the value and extent of the collection has been seriously diminished by the breakage of the greater portion during transit.

6999. [3295] Specimens of pottery, Amroha. SUYD AHMED KHAN, *principal Sudder Ameen.*

Thirty-three of these specimens, remarkable for the superior nature of the clay of which they were constructed, were sent to England for exhibition, but, unfortunately, two samples only came to hand uninjured.

Regarding these specimens the officiating magistrate reports, that the Umroha pottery work is only capable of improvement under European energy and capital, and gives the following information noted under the head of 'Manufactures.'

About 300,000 pieces are annually manufactured at an average of 1R. per hundred.

Articles made of this clay are much sought after, and are used by the natives from all parts of the N.W. Provinces.

The clay is not exported from this country.

Articles made from this clay are intended more for ornament than for use, but cups, saucers, and such like things, are used at festivals and feasts by people of rank. Mahomedans more than Hindoos use these articles.

The pottery articles can be made of all patterns and shapes, but the old oriental designs are those chiefly approved of.

The wholesale market price would be, on an average, 1R. 87A. per hundred.

The clay of which this pottery is composed is evidently of a very superior quality; it shows great strength and is used pure and unmixed in all articles composed of it. It is peculiar to Amroha, where it can be had in large quantities.

7000. [5347] Specimens of painted pottery, Allahabad. GOVERNMENT of INDIA.

Fourteen specimens of this ornamented pottery were sent from India, but from their extremely brittle nature were, on receipt, all found to be more or less damaged.

7001. [5440] Specimen of Puttan pottery, Lahore. LAHORE CENTRAL COMMITTEE. GOVERNMENT of INDIA.

7002. [2895] Specimens of glazed pottery, Lucknow. LUCKNOW COMMITTEE.

7003. [7839] Figure of a buffalo, Jeypore.

7004. [3177] Specimens of pottery, Darjeeling. DR. CAMPBELL.

7005. [2893] Specimens of pottery, Hossengunge. SHAIK FAKEER HOSSAIN.

7006. [2894] Butter cooler, Sarun, Patna. PATNA COMMITTEE. GOVERNMENT of INDIA.

Of sixteen specimens forwarded, this sample only came to hand uninjured.

7007. [1081] Six specimens 'Halla,' glazed tiles, Hyderabad. HYDERABAD COMMITTEE.

Specimens of Pottery manufactured at the MADRAS INDUSTRIAL SCHOOL OF ARTS.

Forwarded by Dr. A. HUNTER.

7008. [381] Five goblets.

7009. [398] Jars.

7010. [379] Salt-cellar.

7011. [378] A pedestal.

7012. [376] Tiles, plain.

7013. [377] Tiles, glazed.

7014. [384] Garden labels, plain.

7015. [406] Garden labels, glazed.

7016. [397] Flower vase.

7017. [394] Red tile.

7018. [388] Four jars.

7019. [387] Porous cells.

7020–2. [389–91] Chemical utensils, four sets.

7023. [392] Flower basket.

7024. [393] Tray.

NATIONAL ARCHIVES OF INDIA

7025-6. [382-3] Raised pie-dish.
7027. [385] Ornamented tiles, glazed.
7028. [390] Jug, glazed.
7029. [396] Vase, glazed.
7030. [399] Two jars, glazed.
7031. [411] Models of cooking utensils.
7032. [402] Basket.
7033. [405] Butter cooler.
7034. [401] Goblet.
7035. [413] Three chemical lamps.
7036. [400] Two goblets.
7037. [407] Two water-pipes.
7038. [444] Ventilating brick.
7039. [409] Garden border tiles.
7040. [404] Cooking utensils.
7041. [408] Rail pattern balustrade.
7042. [410] A 'chattee,' glazed.
7043. [415] Vase, glazed.
7044. [4436] Tea pot.
7045. [4435] Pair of jars.
7046. [4434] Jar and goblet.
7047. [4435] Pair of jars.
7048. [4436] Tea pot.
7049. [4437] Circular ornamental rim.
7050. [4438] Pan.
7051. [4439] Chemical vessels.

7052-3. [594-5] Earthen cups, Vizagapatam. H. H. the RAJAH of VIZIANAGRAM.

7054. [10519] Goblet and cover, North Arcot, Madras. ARMUGA UDAYAR, maker. GOVERNMENT of MADRAS.

7055-6. [10520-1] Vase and cover.

7057. [10522] Vase for wine.

7058. [10523] Vase for flowers.

7059. [572] Figure of a lion, Bangalore Convict School, Mysore. CAPT. J. PUCKLE.

7060. [573] An owl.

7061. [576] Drain tile.

7062. [577] Lid of butter cooler.

The last four specimens are made of potters' clay, buff, and felspar grit in the following proportions:—2 buff, 1 brown potters', and 1 grit. This mixture is found very strong and serviceable.

7063. [575] Purple goglet or water bottle.

There is evidently much manganese in this clay, which hardens by hard firing; the buff is found almost pure, and requires only washing to separate the clay from the grit. This mixture is found very strong and serviceable.

7064. [578] Fire brick.

Two parts buff clay and one part grit.

These specimens (Nos. 7059–64) are illustrative of the clays sent by the same exhibitor, and shown in Class I., No. 425.

CLASS XXXVI.—DRESSING CASES, DESPATCH BOXES, AND TRAVELLING CASES.

Division I.—WRITING CASES AND FITTINGS.

7065-6. [3415-16] Paper-knives, Umritsur, MISSUR GEMA CHUND.

7067. [3419] Paper-knives, Umritsur. GOVERNMENT of INDIA.

7068. [5751] Pen case and tray in ivory, Meerut. KOOER WUZEER ALLY KHAN, *Dep. Magistrate, Meerut.*

7069. [10635] Writing desk in ivory, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

NATIONAL ARCHIVES OF INDIA

7070. [10636] Envelope case, ivory, Vizagapatam.

7071. [10652] Inkstand in buffalo horn, Vizagapatam. GOVERNMENT of MADRAS.

7072. [10653] Envelope box in buffalo horn, Vizagapatam.

7073. [10657] Envelope box in elk horn, Vizagapatam.

7074. [10658] Inkstand in porcupine quills, Vizagapatam.

7075. [10660] Pen tray, Vizagapatam.

7076. [10643] Writing desk in buffalo horn, Vizagapatam. H. H. the RAJAH of VIZIANAGRAM.

7077-8. [10645-6] Paper weights, porcupine quills, Vizagapatam.

7079. [567] Inkstand of horn, Vizagapatam. E. G. R. FANE, Esq.

7080. [568] Inkstand of horn, grotesque, Vizagapatam. G. N. TAYLOR, Esq., *Inam Commissioner.*

7081. [422] Inkstand of elk and buffalo horn, Vizagapatam. DR. MCPHERSON.

Division II.—DRESSING CASES AND FITTINGS, TOILET ARTICLES, ETC.

7082-4. [3406-14-7] Ivory combs, Umritsur. MISSUR GEMA CHUND.

7085-7. [3418-20-3] Ivory combs, Umritsur. GOVERNMENT of INDIA.

7088. [2913] Ivory combs, Seebsagur, Assam. BABOO POORMANUND BOOROOAH PESHKAR.

7089. [2916] Ivory combs, Assam. LIEUT. PHAIRE.

7090. [2921] Ivory combs, Luckimpore. BABOO GOBIND RAM SHURMAH.

7091. [3425] Pincushion of ivory, Umritsur. GOVERNMENT of INDIA.

7092. [3429] Thimbles, ivory, Umritsur.

7093. [2914] Ear probes, ivory, Seebsagur, Assam. BABOO POORMANUND BOROOAH PESHKAR.

7094. [2917] Back scratcher, ivory, Assam. GOVERNMENT of INDIA.

7095. [2920] Back scratcher, ivory, Gowhatty, Assam. BABOO PURSOORAM BOROOAH.

7096. [2919] Fan, ivory, Chittagong. H. H. the RAJAH of TIPPERAH.

7097-8. [10503, 10649] Work baskets, octagonal, ivory, Vizagapatam. GOVERNMENT of MADRAS.

7099. [10651] Jewel case, ivory, Vizagapatam.

7100-1. [10639-40] Two jewel cases, ivory, octagonal, Vizagapatam. H. H. the RAJAH of VIZIANAGRAM.

7102. [10641] Workbox, ivory, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

7103. [10642] Glove box, ivory, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

7104-6. [10637-8, 1066-6] Watch stands, ivory, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

7107. [2230] Two pairs glove stretchers, Travancore. H.H. the RAJAH.

7108. [10648] Watch stand, ivory and buffalo horn, Vizagapatam. GOVERNMENT of MADRAS.

7109. [10655] Tea caddy of elk horn, Vizagapatam. GOVERNMENT of MADRAS.

7110. [10656] Knitting box of elk horn, Vizagapatam. GOVERNMENT of MADRAS.

7111. [10659] Knitting box of porcupine quills, Vizagapatam. GOVERNMENT of MADRAS.

7112. [431] Shell tea ladle and horn handle, Malacca. DR MCPHERSON, *Madras.*

NATIONAL ARCHIVES OF INDIA

FINE ARTS DIVISION.

CLASS XXXVIII.—PAINTINGS IN OIL AND WATER COLOURS AND DRAWINGS.

I.—PAINTINGS ON IVORY.

a. Architectural Subjects and Views.

These paintings are very beautiful, and exhibit a marked improvement in shade and perspective, whilst their minuteness of detail and brilliancy of colouring give evidence of great skill and accuracy of touch.

From DELHI. GOVERNMENT of INDIA.

7113–4. [3002–3] Lahore palace gate at Delhi, inside Delhi. GOVERNMENT of INDIA.

7115. [3004] Taj at Agra.

7116. [3005] Jammul Musjeed, Delhi.

7117. [3006] Dewan Khas at Delhi.

7118. [3007] Temple at Umritsur.

7119. [3008] La Martiniere, Lucknow.

7120. [3009] Mosque Koogat.

7121. [3010] Emambarrah, Lucknow.

7122. [3011] Peacock throne in the palace of Delhi.

7123. [3012] Inside of the Taj at Agra.

7124. [3013] Nurad Shaw Mosque, Delhi.

7125. [3014] The Taj from the river side, Agra.

7126. [3015] Umritsur Temple. ISHMAIL KHAN.

7127. [3016] Interior of Dewan Khas, Delhi.

7128. [3017] Twelve views of Agra, Delhi, and Lucknow.

7129. [3018] Lahore palace gate.

7130. [3019] Dewan Khas gate.

7131. [3020] King's house, Delhi.

7132. [3021] Kootub pillar, Delhi. GOVERNMENT of INDIA.

7133. [3022] Sufdur Tuness' tomb.

7134. [3023] Hoomayoon's tomb, Delhi.

7135. [3025] Kootub pillar, Delhi.

7136. [3026] Nine views of Delhi.

7137. [3027] Eight views for shirt studs.

7138. [3029] Feenut Mehal, Delhi.

Exhibited by ISHMAIL KHAN. DELHI.

7139. [3035] Four views of Lucknow and Delhi.

7140. [3036] Four views of Delhi.

7141. [3037] Four views of Lucknow.

7142. [3038] Four views of Agra.

7143. [3039] Four views of Agra, Lucknow, and Delhi.

7144. [3040] Four views of Delhi.

7145. [5657] View of Kaiser Bagh, Lucknow. SAH MAKKHUN LALL.

7146. [5658] State Procession of the late King of Lucknow. SAH MAKKHUN LALL.

7147. [8003] Teroomaul Nuik's tank, Madura.

7148. [8004] Madura pagoda.

7149. [8005] Teroomaul Naik and ten rajahs inside of Poodoo Munabrun.

7150. [3333] Burmese Mythological painting, Burmah. Messrs. HALLIDAY, FOX & Co.

b. Portraits on Ivory.

7151. [3028] Ex-king of Delhi. ISMAIL KHAN.

7152. [3033] Three portraits of wives of the ex-king of Delhi. GOVERNMENT of INDIA.

7153. [3034] Portraits of Golab Singh, Runjeet Singh, and Bulad Shaw. GOVERNMENT of INDIA.

NATIONAL ARCHIVES OF INDIA

7154. [3024] Eight portraits of kings and queens, Delhi. GOVERNMENT OF INDIA.

7155–6. [3030–1] Portraits of kings and queens, Delhi, for sleeve links.

7157. [3032] Six portraits of wives of the ex-king of Delhi.

7158. [5115] Portrait of Nawab Shurfood Dowlah, Shureef ol Mulk Gholam Rajah Khan, Sherafat Jung of Lucknow. Painted on ivory by the son of Mahomed Alee, a Lucknow artist. Lucknow. H.H. the NAWAB SHURFOOD DOWLAH.

II.—PAINTINGS ON MICA, IN WATER COLOURS, ETC.

7159–60. [2199, 2201] Paintings on mica, small size, Patna. GOVERNMENT of INDIA.

7161–2. [2202–3] Paintings on mica, large size, Patna.

Most of these paintings, by native artists, represent the various domestic occupations and religious ceremonies of the Hindoos.

From LAHORE. GOVERNMENT of INDIA.

7163. [1540] Portrait of Rajah Dheean Singh, Prime Minister of H.H. the Maharajah Runjeet Singh, by native artists.

7164. [1541] Ranee Surdan, wife of Rajah Dheean Singh.

7165. [1542] H.H. the Maharajah Runjeet Singh and Court.

7166–7. [1543–4] Sirdar Shere Singh of Utaree (Kanghur), Umritsur.

7168–70. [1545–7] H. H. Maharajah Runjeet Singh and Court.

7171. [1551] Rajah Heera Singh, son of Rajah Dheean Singh.

7172. [1552] Ranee Sirdan, wife of H.H. Runjeet Singh, with her suite.

7173. [1553] The Maharajah Dhuleep Singh, son of H.H. Runjeet Singh.

7174. [1554] The Maharajah Shere Singh, son of Runjeet Singh, Umritsur. GOVERNMENT of INDIA.

7175–6. [1548–9] The Ameer Dost Mahomed Khan, Cabul.

7177. [1550] H. H. the Maharajah Golab Singh, Cashmere.

From ULWAR. Contributed by H.H. the MAHARAJAH.

7178. [5111] Maharajah Bukhtawar Singh, grandfather of the present chief of Ulwar. Water-colour drawing by a native artist of Ulwar.

7179. [5110] The late Maharajah Bunee Singh, father of the present chief of Ulwar.

7180. [5116] H.H. the Maharajah Sheodan Singh Bahadoor, the present chief of Ulwar, and a liberal contributor to the International Exhibition of 1862. Age 16 years.

7181. [8002] View of the western portion of the city of Ulwar.

7182. [5117] Elephant carriage of the Maharajah of Ulwar.

7183. [5114] 'Unbapershad,' the favourite elephant of the Maharajah of Ulwar.

7184. [5112] 'Asphoor,' the favourite horse of the Maharajah of Ulwar.

7185. [5113] 'Kaisir,' mare, in jumping position, with Ahmedjan Khan.

III.—OIL PAINTINGS.

Exhibited by the artist. AUGUSTE SCHOEFFT.

7186. [9398] Portrait of the last Great Mogul, king of Delhi.

7187. [9399] Portrait of the late Maharajah Shire Sing, king of the Punjaub.

7188. [9400] The Thugs (men stranglers).

This picture represents the moment when the Thugs expect from their chieftain's wife the signal for strangling unsuspecting travellers.

7189. [9401] The Court of Lahore, and other paintings of various interesting Indian subjects, by the same artist, can be seen in the principal dining saloon in the Exhibition Building.

NATIONAL ARCHIVES OF INDIA

CLASS XXXIX.—SCULPTURE, MODELS, ETC.

I.—STATUETTES, AND OTHER ELABORATE CARVINGS IN IVORY.

FROM BERHAMPORE. GOVERNMENT of INDIA.

7190. [3133] Royal yacht, carved by BAWUL of BERHAMPORE.

7191. [3135] Palanquin.

7192. [3136] Juggernath car.

7193. [3137] Travelling cart.

7194. [3138] Eckha.

7195. [3139] Set of draughtsmen, red and white.

7196-7. [3140-1] Statuettes.

7198-9. [3142-3] Country boats.

7200-1. [3144-5] Paper knives.

FROM UMRITSUR. GOVERNMENT of INDIA.

7202. [3424] Boxes for antimony, elaborately carved in ivory, Umritsur. GOVERNMENT of INDIA.

7203. [3426] Boxes with images.

7204. [3427] Chunkuna.

7205. [3428] Salt cellars.

7206. [3430] Box, with gold edges.

7207. [2431] Two cups.

7208. [5882] A cow and calf, Ulwar. H.H. the MAHARAJAH.

7209. [1508] Table ornament, Puttiala. H.H. the MAHARAJAH.

FROM TRAVANCORE. H.H. the MAHARAJAH.

7210. [2228] A lion (a paper weight), Travancore.

7211. [2229] A cow.

7212. [2231] Paper knife, crocodile handle.

7213. [2232] Paper knife, serpent handle.

7214-7. [2233-6] Paper knives, various designs.

7218-21. [2238-41] Parasol handles.

7222. [2242] Pair of birds, ivory, Travancore. H.H. the RAJAH.

7223. [2246] Twenty-four various animals, small.

7224-5. [2247-8] Paper weights, serpents.

7226-7. [2249-50] Paper weights, the human hand.

7228. [445] Three knife handles, large, Burmese. DR. MCPHERSON.

7229. [8106] Two dozen knife handles, table size. DR. MCPHERSON.

7230. [8107] One dozen knife handles, dessert size. DR. MCPHERSON.

7231. [10644] 'Tonjan,' or palanquin, carved in buffalo horn, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

7232. [10504] Two palanquins, Vizagapatam. H.H. the RAJAH of VIZIANAGRAM.

II.—PLASTIC MODELS AND FIGURES.

FROM LUCKNOW. GOVERNMENT of INDIA.

7233. [2939] A Rajpoot.

7234. [2940] A Mahratta.

7235. [2941] A Cabul fruitseller.

7236. [2942] A sweetmeat seller.

7237. [2943] A Sikh.

7238. [2944] A Mussulman fakeer.

7239. [2945] A moulvie, or Mussulman priest.

7240. [2946] A Brahmin.

7241. [2947] A Bengalee baboo.

7242. [2948] A Hindoo fakeer.

7243. [2949] A tailor.

7244. [2950] A cloth merchant.

FROM KISHNAGHUR. GOVERNMENT of INDIA.

7245. [5801] Model of a bazaar, made by a native artist at Kishnaghur. GOVERNMENT of INDIA.

NATIONAL ARCHIVES OF INDIA

7246. [5803] Model of a plough, made by a native artist at Kishnaghur. GOVERNMENT of INDIA.

7247. [5804] Model of hackery and two bullocks. Do. GOVERNMENT OF INDIA.

7248. [5805] Model of carriage and two bullocks.

7249. [5807] Model of palanquin and bearers.

7250. [5808] Various plastic figures, illustrating the different native trades and professions.

These include the following:

7251. (1) Bheestie, or water carrier.

7252. (2) Up-country woman.

7253. (3) Brahmin praying.

7254. (4) Women collecting ghosee.

7255. (5) Boistom.

7256. (6) Songoter boistom.

7257. (7) Breadman.

7258. (8) Moyrah sweetmeat seller.

7259. (9) Santhal.

7260. (10) Mahomedan fakir.

7261. (11) Rowanee bearer.

7262. (12) Spearman.

7263. (13) Boonah.

7264. (14) Boistom with tomtom.

7265. (15) Toobriwalah.

7266. (16) Ploughman.

7267. (17) Carpenter.

7268. (18) Dhoonerie, cotton dresser.

7269. (19) Woman dressing cotton.

7270. (20) Spinning woman.

7271. (21) Dwijee (tailor).

7272. (22) Ooriah bearer.

7273. (23) Up-country shoemaker.

7274. (24) Shenkaree.

7275. (25) Hooka hurdar.

7276. (26) Up-country cloth seller.

7277. (27) Durwan.

7278. (28) Cook.

7279. (29) Sweeper.

7280. (30) Kejmutgar.

7281. (31) Chuprassee.

7282. (32) Native Shikaree.

7283. (33) Up-country sepoy.

7284. (34) Syee (groom).

7285. (35) Ayah (nurse).

7286. (36) Pundit.

7287. (37) Khansama.

7288. (38) Sheristadar.

7289. (39) Dhare.

7290. (40) Musalchee.

7291. (41) Goldsmith.

7292. (42) Bangy hurdar.

7293. (43) Washerman.

7294. (44) Plate maker.

7295. (45) Snake charmer.

7296. (46) Earthen pot maker.

7297. (47) Two women grinding oats.

7298. (48) Dhenkrewala rice grinding.

7299-7301. [2922-4] Kesah Kanie, Burmese figure, Assam. GOVERNMENT of INDIA.

7302. [7874] Four figures, Poona. GOVERNMENT of BOMBAY.

7303. [8164] Plastic 'Condapully,' figures illustrating the various native classes, trades, and professions, Kistna, Madras. MADRAS GOVERNMENT.

These models include the following:

7304. (49) Hermit.

7305. (50) Native drummers.

7306. (51) Singers.

7307. (52) Mussulman servant armed.

7308. (53) Servant of the zemindar.

7309. (54) Valama caste men.

7310. (55) Komali or Banian carrier.

7311. (56) Toddy drawer.

NATIONAL ARCHIVES OF INDIA

7312. (57) Shepherdess churning.

7313. (58) Tappal runners or postmen.

7314. (59) Torchman.

7315. (60) Water carrier.

7316. (61) Mussulman peon.

7317. (62) Snake charmers.

7318. (63) Fowler.

7319. (64) Shepherd.

7320. (65) Woman of basket makers' caste.

7321. (66) Washerwoman.

7322. (67) Tank digger woman.

7323. (68) Woman of fowlers' caste.

7324. (69) Barber.

7325. (70) Woman of potters' caste.

7326. (71) Toddy drawer.

7327. (72) Carpenter.

7328. (73) Butler.

7329. (74) Satani beggar.

7330. (75) Sangam beggar.

7331. (76) Rohilla.

7332. (77) Beggar.

7333. (78) Raju.

7334. (79) Brahmin woman.

7335. (80) Meat seller.

7336. (81) Goldsmith at work.

7337. (82) Shroff.

7338. (83) Woman working at a mill.

7339. (84) Dasari beggar.

7340. (85) Horseman or groom.

7341. (86) Cooly man.

7342. (87) Zemindar's slave.

7343. [589] Elephant and figures of Shola pith, Tanjore. MADRAS GOVERNMENT. W. M. CADELL, Esq.

7344. [5344] Sample of pith (*Æschynomene aspera*) from which the above-named model was manufactured, Calcutta. GOVERNMENT of INDIA.

NATIONAL ARCHIVES OF INDIA

NATIONAL ARCHIVES OF INDIA

INTERNATIONAL EXHIBITION, 1862.

INDIA.

MEDALS AND HONOURABLE MENTIONS AWARDED BY THE INTERNATIONAL JURIES.

According to Rule 14, in directions to Juries, where two or more awards are made for separate specimens in the same class, one medal or certificate only will be issued to the Exhibitor.

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award
BENGAL					
Calcutta . . .	Central Committee . . .		1	3B	For illustrative series of sugars and spices produced in India
	Do.	1		4C	For collection of useful vegetable products, including dye stuffs, &c. &c.
	Do.	1		1	For interesting collection of works executed in soapstone*
	Oldham, Professor T. . .	1		1	For specimens with the analysis of a series of coals from many localities in India, and for the elaborate work of the Geological Survey conducted by him
	Surveyor General of India	1		1	For the admirably executed maps of a part of the Himalayas, by the Topographical Survey now in progress
	Ahmuty & Co.	1		4C	For fibre prepared from *Æschynomene cannabina*
	Allen & Hayes	1		33	For excellent workmanship and general merit of a silver vase, presented by the Government of India to Rajah Deonarain Singh, of Benares
	Borradaile, John, & Co. .		1	3B	For goodness of quality of tea
	George & Co.	1		3B	For the excellent quality of their arrowroot
	Guthrie, Col.		1	1	For the exhibition of his very beautiful series of works of art in jade and rock crystal
	Do		1	11C	For his interesting collection of arms
	Kooney Lall Dey	1		2B	For a large collection of East India drugs
	Do.	1		4D	For excellent quality of fragrant oils
	Lyall, Rennie, & Co. . .		1	20	For raw silk from their mills at Calcutta and Berhampore
	Martin, John		1	11C	For his interesting collection of arms
	Sainte, Brothers		1	4A	For goodness of manufacture of stearic candles
	Shaik Golab		1	24	For embroidery on muslins and tusser silk, deserving credit
	Simpson, Dr.	1		14	For a valuable series of portraits of the native tribes
	Steel, H.	1		4C	For samples of indigo from Hooghly
Assam . . .	Bivar, Major H. S. . . .	1		4C	For madder from Assam
	Dhatooram Jemadar . .	1		3B	For excellence of manufacture, strength and flavour of his tea
	Martin, I. N.†	1		4C	For caoutchouc from the Cossia Hills
	Morgan, C. H.	1		3B	For excellence of manufacture, strength and flavour of his teas
	Phaire, Lieut. W. . . .	1		3B	For excellency of his peppers
	Do.		1	11C	For his interesting collection of arms
	Wagentrieber, W. G. . .	1		4C	For specimens of 'room' dye, an indigo made from a species of ruellia
Bhaugulpore. .	Sandys, T.		1	10A‡	For mortar, cement, and concrete of good quality
Cachar . . .	Cachar Tea Company . .	1		3B	For excellence of manufacture, strength and flavour of their tea
	Tydd, Forbes, & Co. . .		1	3B	For goodness of quality of their tea
Chota Nagpore .	Blechynden, C. E. . . .	1		4C	For cleaned cotton from New Orleans seed, @ 12½*d.* per lb.

* Awarded to the specimens forwarded from Agra.
† Initials erroneously given in the Jury list of Awards as W. C.
‡ Entered in Catalogue in Class I.

NATIONAL ARCHIVES OF INDIA

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award
BENGAL—*cont.*					
Chota Nagpore .	Blechynden, E. C. . . .		1	4C	For his Egyptian cleaned cotton, valued @ 13*d.* per lb
	Leibert, M. T.		1	3B	For being the first producer of teas at Hazareebaugh
	Do.		1	4C	For Sea Island cotton, uncleaned, from Seetagurrah, value 9½*d.*, if cleaned 24*d.**
Cuttack . . .	Local Committee . . .	1		3C	For leaf tobacco, sound and well-grown
	Juggernauth Doss . . .	1		33	For general merit and good work of double branch epergné and jewel casket
	Taylor, Rev. George . .	1		4C	For his cotton from Piplée, valued at 11*d.*
Dacca	Hurmohun Roy		1	24	For lace embroidered scarfs in black, silver and gold
	Juggut Chunder Doss . .		1	24	For a large collection of rich embroidered gold and silver scarfs
	Do.		1	24	For India muslin scarfs, embroidered in gold, also some rich gold embroidered Cashmere shawls, small
Darjeeling . .	Brine, F., for Hope Town Tea Association		1	3B	For goodness of quality of tea
	Campbell, Dr. A. . . .		1	9	For his models of agricultural implements
	Do.		1	11C	For his interesting collection of arms
	Do.		1	29	For his collection of lichens and reeds
	Samler, Major	1		3B	For excellence of manufacture, strength and flavour of tea
	Scanlan, P. H.		1	3B	For goodness of quality of his tea
Malda	Thompson, Dr. R. F. . .	1		4C	For specimens of a new green vegetable dye, with illustrations of its application
	Do.		1	3C	For a specimen of mango spirit
Nattore . . .	Baboo Shiwaprasad Sanyal, Assessor, &c.		1	4C	For cleaned cotton from Nattore. Value, 9½*d.*†
Shahabad . .	Mylne, Mr.	1		4C	For cleaned cotton from Shahabad, Arrah, and for New Orleans seed, valued at 13½*d.*
	Government of India . .		1	1	For a complete and instructive series of specimens, illustrating the dressing and smelting of tin ores from a new locality‡
	Do.	1		2A	For a collection of chemicals, manufactured in India
	Do.	1		3A	For excellence of quality of paddy and rice, &c.
	Do.		1	4D	For collection of oils of excellent quality
	Do.		1	11C	For an interesting collection of arms
	Do.	1		18	For superior manufactured cotton goods
	Do.	1		22	For straw mats of excellence of design, colour, and manufacture
	Do.	1		23	For a good collection of plain dyed cotton fabrics
	Do.	1		26B	For saddles, trappings, &c. creditable as native productions§
	Do.		1	27D	For well-made native shoes, clogs, &c.‖
	Do.	1		30AB	For a collection of sandalwood writing desks, jewel boxes, &c. of great artistic excellence¶

* In Jury List awarded to the 'Collector Nagpore,' but sample produced by Mr. Leibert.
† In consequence of a typographical error this certificate was awarded to the 'Collector of Nellore.'
‡ Chief contributor of these José D'Almeida, Esq., of Singapore.
§ Chiefly manufactured at Cawnpore.
‖ From Bareilly, Jhansi, Lahore, and Umritsur.
¶ From Delhi, &c.

NATIONAL ARCHIVES OF INDIA

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award
BENGAL—*cont.*	Government of India . .	1		33	For the general excellence of the gold and filigree work, brooches, bracelets and jewellery *
NORTH WEST PROVINCES AND OUDE					
Benares . . .	Dabee Pershaud . . .	1		24	For violet and gold, and mazarine and silk damask, very rich and beautiful Kincaub, well executed
	Do.		1	24	Embroidered table mats and bags
	Mohun Lall and Chittoo Lall	1		24	For two magnificent black and gold Kincaub scarfs; blue and gold Kincaub pieces, and other articles, well adapted for covering couches
	Do.		1	24	Embroidered table mats and bags
	Silhut Chundrabhun . .	1		24	For Kincaub pieces, blue and gold, and white and gold, of great merit
	Do.		1	24	Embroidered table mats and bags
Dehra Doon . .	Dehra Doon Tea Company		1	3B	For goodness of quality of teas
Delhi	Manak Chund	1		24	For black and gold, and green and gold (Cashmere cloth) embroidered shawls; scarlet cape, embroidered white, and a large assortment of similar articles of great beauty
	Do.		1	24	For a net shawl, embroidered with floss silk, cardinal scarf, in good taste
Goruckpore . .	Osborne, George. . . .	1		4C	For caoutchouc from Goruckpore
Gurwhal . . .	Warrand, T.		1	3B	For goodness of quality of tea
Jubbulpore . .	Superintendent of the School of Industry	1		22	For the excellence of design, colour, and manufacture of carpets
Kumaon . . .	M'Ivor, K., of the Konsamire Plantation	1		3B	Tea, excellence of manufacture, strength, and flavour
	Troup, C. R., of the Megree Plantation		1	3B	For goodness of quality of teas
Meerut . . .	Superintendent of Jail. .	1		22	For the excellence of design, colour, and manufacture of carpets
	Kooer Wuzeer Ali Khan, Deputy-Magistrate		1	27D	For good quality of shoes
Shahjehanpore .	Carew & Co.	1		3B	For excellence of manufacture of sugar
	Do.	1		3C	For general excellence of their cane-juice rum
Sutwarree Bundelkhund	Dashwood, W., Collector of Banda†	1		4C	For cleaned cotton from Sutwarree, unknown seed, 11*d.* and 17*d.* per lb.
OUDE					
Khyrabad . .	Lindsay, C., Deputy-Commissioner of Hurdin		1	11C	For this interesting collection of arms
Lucknow . . .	Local Committee. . . .	1		4C	For a series of the vegetable fibres of Lucknow, and other vegetable products
	Do.		1	4D	For good quality of collection of oils
PUNJAUB					
Hansi	Jardine & Co.	1		4C	For samples of their indigo.
Lahore . . .	Central Committee . . .	1		4C	For a collection of lacquered turnery
	Do.		1	4C	For cleaned cotton from the Leia district, value 8¼*d.* per lb.‡
	Do., for manufacturers of Bokhara carpets	1		22	For excellence of design, colour, and manufacture of carpets
	Harrison, Captain, 79th Highlanders		1	11C	For a beautiful dagger

* From Delhi and Benares.
† In Jury List, Mr. Dashwood is termed Collector of Sutwarree.
‡ Awarded in error to Captain Mitchell, Madras.

NATIONAL ARCHIVE OF INDIA

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award
PUNJAUB—*cont.*					
Lahore . . .	Superintendent of Central Jail	1		22	For the excellence of design, colour, and manufacture of carpets
Peshawur . . .	Mahomed Zúma . . .		1	11c	For a collection of arms
Shahpore . . .	Superintendent of Jail .	1		4c	For a new application of Mádar floss to mat making: a very interesting experiment
Sealkote . . .	Imaum, Ad-deen . . .	1		33	For excellent workmanship of steel inlaid with gold
	Indian Flax Company (Belfast)	1		4c	For various samples of flax grown in the Punjaub
Umritsur . . .	Local Committee . . .	1		4c	For a collection of vases in black lacquered work, with ornamentation in chemical amalgam
	NATIVE PRINCES, &c.				
Benares . . .	Rajah Deonarain Sing . .	1		4c	For a model of a Hindoo temple in sandalwood
Bhawulpore . .	H. H. the Nawab . . .		1	11c	For his interesting collection of arms
Jeypore . . .	H. H. the Rajah. . . .	1		4D	For excellence of quality of fragrant oils
	Do.		1	11c	For his interesting collection of arms
	Do.	1		33	For beautiful workmanship of enamelled gold spice box and cup
Oude, Lucknow .	Nawab Shurf-ood-Dowlah	1		27D	For excellence of work
	Do.		1	27D	For gold embroidered dress, turban, and slippers
Do., Moraon . .	Rajah Goree Shunker . .	1		27D	For finely embroidered shoes and slippers
Nepaul . . .	H. H. Sir Jung Bahadoor, K.C.B.	1		4c	For Nepaul madder
	Do.		1	11c	For his interesting collection of arms
	Do.		1	24	For a great variety of gold embroidered articles of dress
Peshawur . . .	H. H. the Nawab . . .		1	11c	For a collection of arms
Puttiala . . .	H. H. the Rajah . . .		1	11c	For his interesting collection of arms
Rampore . . .	The Nawab		1	11c	For his interesting collection of arms
Ulwar	H. H. the Rajah . . .		1	11c	For his interesting collection of arms
	Do.		1	24	For a great variety of gold embroidered articles of dress
	Do.		1	27D	For well-made native shoes
BOMBAY AND SINDE					
Bombay . . .	Birdwood, Dr.	1		4c	For an extensive collection of Indian vegetable products of economic value
	Do.		1	4D	For a collection of oils and their goodness of quality
	Bhrimjee Byramjee . . .	1		30AB	For good design and workmanship of carved furniture
	Jamsetjee Heerjee . . .	1		4c	For a large number of admirable carvings in sandalwood
	Sellon, Captain		1	14	For a series of photographic views in India
	Smith, Fleming, & Co. .	1		4c	For cotton from Bourbon seed, cleaned, valued at 12½*d.* per lb., and various others
Ahmedabad . .	The Collector.	1		4c	For Nurma native cotton from Ahmedabad, value 10½*d.* per lb.
	Do., for manufacturers of Kincaubs (Ahmedabad)		1	24	For Kincaubs and other specimens of gold and silver (loom) embroidery on silk
Belgaum . . .	Hearn, Mr.	1		4c	For cleaned cotton, valued at 12*d.* per lb.

NATIONAL ARCHIVES OF INDIA

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award
BOMBAY AND SINDE—*cont.*					
Dharwar . . .	The Collector		1	9	For models of agricultural implements
Poonah . . .	Collector of	1		4c	For cotton from Poonah, native seed
Surat	Manufacturers of kincaubs		1	24	For kincaubs, and other specimens of gold and silver (loom) embroidery on silk
SINDE					
Hyderabad . .	The Committee at . . .	1		4c	For a collection of lacquered turnery
	Do., for manufacturers .		1	24	A variety of table covers, cloths, embroidered with silk, of great merit
Seebee	The Collector		1	4c	For cotton from Seebee, Sinde
Shikarpoor . .	Manufacturers of carpets .	1		22	For the excellence of design, colour, and manufacture of their carpets
Bombay . . .	Government		1	4c	For Lalia native cotton, uncleaned, from Ahmedabad. Value, 9*d.*
	Do.	1		4c	For sandalwood carvings
NATIVE PRINCES, &c.					
Kutch	H. H. the Rao		1	11c	For his interesting collection of arms
	Do.		1	24	For mats and table covers of various designs
	Do.		1	33	For general merit in articles of silver
	Do.	1		4c	For a model of a Hindoo temple in sandalwood
	Do.		1	4c	For cleaned cotton. Value, 8¾*d.* per lb.
Khyrpoor . . .	H. H. Meer Ali Morad .		1	24	For a great variety of gold embroidered articles of dress, turbans, slippers, &c.
	Do.		1	11c	For his interesting collection of arms
	Do.	1		27D	For a good display of native shoemakers' work
Zanzibar . . .	H. H. the Sultan . . .	1		4c	For specimens of copal
MADRAS					
Madras . . .	Central Committee . . .		1	11c	For an interesting collection of arms
	Cleghorn, Dr.		1	4D	For goodness of quality of fragrant oils
	Deschamps, J.	1		30AB	For good design and workmanship of rosewood arm-chairs
	Hunter, Dr.	1		1	For a carefully collected series of pottery clays and their manufactured products
	Do.	1		4c	For a collection of the fibrous materials of Madras, admirably prepared
	McPherson, Dr.	1		4c	For a collection of wood carvings and other manufactures and vegetable products
	Maitland, Col.	1		4c	For fifteen excellent slabs illustrating the woods now in use in Madras
	Mitchell, Capt.		1	1	For an instructive series of specimens of magnetic iron sand, employed in some parts of India by native iron smelters
Arcot, North .	Rámashishaia	1		4c	For indigo from N. Arcot
	Venkata Raó and Bapana Raó	1		23	For their good dyed cloth and printed chintzes
Beypore . . .	East Indian Iron Co. . .	1		1	For an interesting and instructive collection of specimens illustrating the production of iron and steel in the Madras Presidency
Canara, South .	Coelho, V. Pedro . . .		1	3B	For goodness of quality of peppers
	Do.	1		4c	For a series of vegetable fibres and for gamboge from South Canara
	Do.	1		3c	For excellence of Palmyra arrack
	Do.		1	4c	For thirty-six specimens of wood
Chingleput . .	Shortt, Dr. John . . .		1	2B	For a collection of East India drugs

NATIONAL ARCHIVES OF INDIA

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award.
MADRAS—*cont.*					
Chingleput . .	Shortt, Dr. John . . .	1		4c	For clean cotton from Chingleput, Egyptian seed. Value, 11*d.* per lb.*
	Do.	1		4c	For a series of mat-making materials and vegetable fibres for general purposes, and for other vegetable products of economic value.
Coimbatore . .	McIvor, W. G., Superintendent of Gardens, Ootacamund	1		4c	For admirable specimens of fibres prepared from the Neilgherry nettle
Ellore	Carpet manufacturers . .	1		22	Collective medal for excellence of design, colour, and manufacture of carpets†
Salem	Collector of	1		4c	For Oopum native cotton from Salem, valued at 11*d.*‡
	Chetumbara Pillay . . .	1		4D	For excellence of fragrant oils
	Fisher & Co.	1		2A	For excellent quality of their saltpetre
	Do.		1	3B	For goodness of quality of coffee
	Do.	1		4c	For samples of indigo, and for cleaned cotton from Bourbon seed, valued at 12½*d.* per lb.
Tanjore . . .	Carpet manufacturer . .	1		22	Medal for the excellence of design, colour, and manufacture of carpet (rug)§
Tinnevelley . .	Edaiyangudi Missionary School, Mrs. Caldwell, Directress		1	24	White and black lace from Tinnevelley, showing considerable aptitude for this class of manufacture, and that with perseverance great progress would likely be made
Trichinopoly . .	Rosâlingum, Assary . .	1		33	For gold chain and bracelet and general merit of workmanship
	Government of Madras .	1		4c	For a collection of vegetable products
	Do.	1		24	For a beautiful embroidered dress, with gold and beetle wings; black muslin dress embroidered with ditto; also a white muslin dress, with other articles of the same class, showing excellence of design and workmanship‖
Mysore . . .	Astagram Sugar Company	1		3B	For excellence of manufacture of their sugar
	Do.	1		3c	For general excellence of rum
	Onslow, Col. W. Campbell	1		3B	For excellent quality of coffee
	Puckle, Capt. J.	1		4c	For a series of 26 specimens of wood of Mysore, showing the strength of each
	Government of Mysore .	1		4c	For sandalwood carvings, and for cleaned cotton from Mysore, valued at 12½*d.* per lb.
	Do.		1	4c	For cotton from *Gossypium herbaceum*, value 8¾*d.* per lb.
	Do.		1	3c	For leaf tobacco
	Do.		1	9	For models of agricultural implements from Bangalore
NATIVE PRINCE					
Vizianagram . .	H. H. the Rajah . . .	1		1	For the interest attaching to his graphite, found in a new locality
	Do.		1	27D	For native work in native shoes and sandals
	Do.		1	30	For inlaid work, being of good design and workmanship

* Awarded to 'Collector of Chingleput,' but exhibited by Dr. Shortt.
† Awarded, under head of 'Madras Manufacturers,' to the Ellore carpet weavers.
‡ This cotton, forwarded by the Collector of Salem, is from Messrs. Fisher & Co., whose specimens of Bourbon cotton are also referred to in the Jury's award of a medal for indigo.
§ The silk rug here referred to was forwarded for exhibition by Saccharam Sahib, son-in-law of the late Rajah of Tanjore.
‖ These embroideries were executed to order by Hoossain Khan.

NATIONAL ARCHIVES OF INDIA

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award
BURMAH AND STRAITS SETTLEMENTS					
Rangoon	Phayre, Colonel	1		3c	For sound, well-grown, and fragrant leaf tobacco
	Local Committee	1		4c	For a collection of the useful vegetable products of Burmah
	Brandis, Dr.	1		4c	For an excellent scientifically named collection of 120 woods of Burmah
Malacca	De Wind, A. A.	1		4c	For Gutta terbole
	Baumgarten, J.		1	4c	For specimens of Malacca cotton, value 12½*d.* per lb.
	H. H. Inche Wan Aboo Bakar		1	4c	For good specimens of Malaccan woods
	Neubronner, T.	1		4c	For several varieties of gutta percha from Malacca
Penang and Province Wellesley	Glugor Estate (the Proprietors)	1		4c	For Sea Island cotton, at 24*d.* per lb., and for Pernambuco, at 13*d.* per lb.
	Horsman, Hon. E., M.P.	1		3B	For excellent quality of sugars
	Hutchinson, A.	1		4c	For Washington cotton from Province Wellesley
	Man, Hon. Major		1	4c	For 25 specimens of Penang woods
	Nairn, Lawrence		1	3B	For good tapioca, and novelty of preparation
	Scott, G.	1		4D	For excellence of quality of fragrant oils
Singapore	Local Committee		1	4A	For good collection of oils
	Do.	1		3B	For excellent quality of spices, tapioca, and sago
	Do.	1		4c	For series of mats and mat-making materials, from Penang and Province Wellesley
	Angus, G.	1		4c	For a valuable collection of resins, Dammar gums, and tanning materials
	Brown, G. H.	1		4c	For Sea Island cotton, valued at 14*d.* per lb.
	Cavanagh, Hon. Col.		1	4c	For cleaned cotton from Singapore, Pernambuco seed, 12½*d.*
	Do.		1	11c	For his interesting collection of arms
	D'Almeida, José	1		3B	For excellency of peppers
	Do.	1		3c	For general excellence of rum
	Thompson, D. C.*	1		3B	For excellent quality of tapioca, and novelty of preparation
	Tan Kim Sing	1		3c	For general excellence of arrack
	Do.	1		27D	For native boots, shoes, clogs, &c., well made
Tringanu	H. H. the Rajah		1	11c	For his interesting collection of arms
	Do.	1			For turnery in wood, supposed to be tamarind
ENGLAND	Montgomery, Martin	1		1	For his illustration of the hydrographical basins of India
	Do.	1		29	For the merit of a topographical map of India
	Cautley, Col. Sir P., K.C.B.		1	13	For a copy of Troughton's level; considered as a good specimen of native workmanship
	Reid, Colonel, C.B.	1		25A	For showing two large and fine specimens of Bengal tiger furs
	Do.		1	29	For two stuffed tigers
	Halliday, Fox & Co.	1		4c	For cleaned cotton from Arracan, valued at 13*d.* per lb.
	Do.	1		3B	For excellent quality of spices from Rangoon
	Do.		1	3A	For paddy and rice from Rangoon, comparatively good
	Do.	1		4c	For an extensive collection of the dyeing and tanning materials of Rangoon

* Manager on the estate of R. Wilson, Esq.

NATIONAL ARCHIVES OF INDIA

Presidency or Locality	To whom awarded	Medal	Hon. Mention (Certificate)	Class	Objects awarded and reasons for the award
ENGLAND—*cont.*					
	Watson, Dr. J. Forbes. .	1		1	For an extensive collection of soils, and the scientific labour bestowed on the analyses*
	Do.	1		4C	For his arrangements of the fibres of India in an admirably practical manner, showing the relative capabilities of the various materials
	India Museum	1		3A	For excellence of Indian grains and pulses, with analyses by Dr. J. Forbes Watson
	Moore, F.	1		4B	For a very complete collection of the various species of silkworms
	Do.	1		29	For his collection of Asiatic silk-producing moths

* The soils here referred to were selected for examination from the collection, now in the India Museum, made by Messrs. de Schlagintweit. The analyses were executed for my department by Dr. Albert Bernays, Professor of Chemistry, St. Thomas's Hospital; by Mr. W. Valentine, Senior Assistant, Royal College of Chemistry, and by Mr. F. A. Manning, of Leadenhall Street.

In consequence of an accidental oversight the excellent specimens of canvas and bagging exhibited by the 'Borneo Company' did not come under the notice of the Jury.

J. F. W.

NATIONAL ARCHIVES OF INDIA

INDEX.

ADA

PAGE

ADAPTATION of metals to special purposes . . 10
Agricultural implements (4229–4262) 193
Agricultural produce . . . 45
Alkalies, earths, and their compounds 27
Animal and vegetable substances used in manufactures 85
Animal food products . . 76
Animal oils (1859–73) . . 85
Animal substances used in manufacture . . . 97
Apparel, miscellaneous . . 239
Arms, small (4326–36) . . 196
Arrowroot (1633–43) . . 71

BATTLE-AXES, spears, arrows (4387–4413) . . 198
Beadwork 233
Beeswax 85
Bidri ware (6815–7) . . 266
Bituminous bodies and native naphtha 14
Blanketings, etc. (5000–17) . 218
Bone, horn, etc. . . . 103
Books, etc. (6107–11) . . 250
Boots and shoes (6018–54) . 247
Building stones (326–336) . 16

CALIGRAPHY, &c. (6112–6131) 250
Canvas (4682–95) . . . 208
Caoutchouc (2431–33) . . 112
Carpets, rugs, and mats . . 222
Carved furniture (6226–60) . 254
Carvings in sandalwood, etc. (3843–3939) . . . 182
Cashmere shawls . . . 219
Cellular substances (3147–8) . 151
Cements and artificial stones (371–4) 17
Cereals (1023–1335) . . 46
Charcoal (3745–50) . . 180
Chemical substances used in manufacture . . . 27
Chemical substances and products 27
Chemical substances used in medicine and pharmacy . 30
Chickun work (5304–67) . 229
Chogas, etc. (5825–33) . . 242

COT

PAGE

Cholees, etc. materials for . 246
Churrus, or hemp resin (1803–1815) 81
Civil engineering and building 194
Clays (392–425) . . . 18
Clothing, articles of . . 239
Coals, series of Indian, (224–254) 11
Coffee, table of exports . . 69
Coins (6803-10) . . . 265
Coir, and coir rope, table of exports 150
Committees, Indian v.–xvi.
Copper ores (125–7, 131–3) . 8
Cordage of all kinds (4808–4878) 212
Cornelian, agate, etc. manufactures 270
Cotton, table of exports . . 123
Cotton, from
Arracan, Pegu, Tenasserim and Straits' Provinces (2908–25) . . . 132
Assam (2765–70) . . 127
Bancoorah (2726–31) . . 125
Behar (2745–6) . . . 126
Bogra (2735) . . . 126
Burdwan (2712–25) . . 125
Cachar (2772–5) . . 127
Chittagong (2707–11) . 125
Chota Nagpore (2781–90) . 128
Cuttack and Sumbulpore (2693–2706) . . . 122
Darjeeling (2780) . . 128
Garrow Hills (3778–9) . 128
Gwalior and Ulwar (2810–2822) 130
Madras (2885–99) . . 131
Midnapore (2732–4) . . 126
Monghyr (2737–44) . . 126
Mysore (2900-7) . . 132
North-Western Provinces—Bundelkund . . . 129
Patna (2751–2) . . . 127
Pubna (2736) . . . 126
Punjaub and Sinde (2823–2841) 130
Sarun (2747–50) . . 126
Shahabad (2753–62) . . 127
Silhet (2776–7) . . . 128
Tirhoot (2763–4) . . 127
Western India and Berar (2842–84) . . . 131
Cotton goods, table of exports 205

FUR

PAGE

Cotton, silk 133
Cotton yarn and thread (4556–4568) 204
Counterpanes (5258–60) . 228
Cutch, or Catechu (Acacia Catechu) (2682–92) . . 122
Cutlery (6516–27) . . . 259

DATE SUGAR, manufacture of 75
Dhotees (5834–63) . . 243
Drawings for teaching . . 250
Dressing-cases, etc. . . 273
Dressing-cases and fittings (7083–7113) . . . 274
Drugs, Indian (613–952) . 30
Dye stuffs and tanning materials 113
Dyes, table of exports . . 112
Dyeing, samples of . . 227

EARTHY and semi-crystalline minerals . . . 22
Edible algæ, etc. (1673–81) . 73
Educational works and appliances 250
Elastic and plastic gums (2431–2449) 112
Embroidery, miscellaneous . 233
Enamelling and Damascene work 266
Ezarmunds and Cummerbunds 243

FEATHERS, table of exports 235
Feathers and feather work (5625–67) 236
Female attire . . . 243
Fibres (2943–3148) . . 138
Fibrous substances . . 122
Figures, plastic, etc. (7233–7344) 277
Filigree work . . . 263
Fine Arts Division . . 275
Fish maws and shark fins (1726–40) 76
Fish maws, table of exports . 77
Fossil Cephalapoda, etc. (6150–6225) 252
Fruits, dried, (1336–53) . 61
Fuel 11
Furniture, upholstery, etc. . 254

NATIONAL ARCHIVES OF INDIA

GAM

	PAGE
GAMES and Toys (6134–6149)	250
Geological maps, plans and sections	1
Geological survey of India, maps of	2
Glass inlaid with gold	267
Gold and silver, articles in	260
Gold embroidery	230
Grains, Indian, in the ear, (962–1022)	45
Grocery, or preparations of food	61
Gums (2256–2341)	104
Gums, table of exports	105
Gunny bags, table of exports	142
Gutta percha (2438–44)	112
HAIR, table of exports	236
Half-stuff (6055–60)	248
Handkerchiefs, silk (4950–2)	217
Hardware, metal work, &c.	257
Hats, caps, etc.	240
Head coverings	239
Hemp, and hemp rope, table of exports	145
Hides and skins, table of exports	238
Hookahs (1854–8)	84
Horns, table of exports	103
Horological instruments (4538)	203
INDIA cotton, tabular synopsis of	134
India rubber	112
Indigo (2450–2503)	113
Indigo, table of exports	114
Inlaid work (5306–6422)	255
Iron and general hardware	257
Iron ores (26–38, 83–112)	3–5
Ivory carvings (7190–7232)	277
Ivory, paintings on (7114–59)	275
Ivory, table of exports	251
JADE and rock crystal, manufactures	267
Japanned work (6293–6304)	255
Jewellery	260
Jewellery, table of exports	260
Jury awards	281
Jute, and jute rope, table of exports	141
KASHMERE shawls (5018–5073)	220
Kashmere shawls, table of exports	219
Kerchiefs for the head (5948–5957)	245
Kincobs (5261–80)	228
Koftgari work (6822–33)	267
LACE (5281–5303)	229
Lace, gold	231

MUS

	PAGE
Lacs, crude, stick lac (2349–2372)	108
Lac, table of exports	109
Lead ores (137–141)	8
Leather, with saddlery and harness	237
Lichens (2657–9)	121
Lignite and peat (255–261)	13
Limestones (299–325)	15
Linseed, table of exports	91
Lithographic stones (543)	23
Loongees, or scarfs (5768–5824)	241
MADDER, table of exports	116
Manufactures in stone, alabaster, etc. (4264–4325)	195
Manufacturing machines and tools (4190–4225)	190
Manufactures in flax, hemp, and other fibres (478–96)	211
Manufactures from straw, grass and other similar materials (3949–4017)	184
Marbles (337–342)	16
Materials for baskets, brooms, etc. (3099–3113)	149
Mat-making materials (3091–8)	149
Mats, (5144–5207)	226
Mats, table of exports	225
Matting of hemp, etc.	225
Medals, jury awards, etc.	281
Medicinal gum resins (2330–2348)	107
Medicinal substances from the vegetable and animal kingdom (613–952)	30
Metallic preparations employed in medicine (602–612)	30
Mica (366–9)	17
Mica, paintings on, etc. (7159–7185)	276
Military engineering	196
Millets	48
Mineral waters (497–520)	22
Minerals used in the manufacture of pottery and glass	17
Minerals used in manufacture (550–6)	23
Minerals used for ornament (433–464)	19
Mining and quarrying operations	1
Miscellaneous drugs (953–961)	44
Mixed fabrics, etc. (5080–5092)	222
Models, topographical of India	1
Models carved in wood (3940–3948)	183
Molasses, table of exports	75
Munjeet or madder root	115
Musical instruments (4539–4555)	204
Musk, table of exports	186
Muslins (4569–98)	206

RUG

	PAGE
NAPKINS and doyleys (4637–55)	207
Native metals	9
Natural history, illustrations	252
Naval architecture and ships' tackle (4414–24)	198
Non-metallic mineral products	11
OIL PAINTINGS (7186–7189)	276
Oils, table of exports	86
Oils and oil seeds, table of exports, Bombay	92
Oleo-resins (2413–30)	111
Opium (1763–1802)	78
Opium, table of exports	79
Ores and metallurgical operations	3
PAPER, printing, etc.	248
Papier maché, etc. (6265)	254
Perfumery	185
Perfumery, table of exports	185
Perfumes of animal origin (4018–9)	185
Perfumes derived from plants (4020–4184)	186
Personal ornaments in tinsel, ivory, horn, hair, etc.	271
Petroleum	14
Philosophical instruments (4425–6)	200
Photographic pictures and likenesses (4427–4537)	200
Physical education appliances	250
Pickles, preserves, dried fruits, etc. (1354–99)	61
Pigments, dyes, and various other chemical manufactures (595–600)	30
Pigments and dyes (2251–2555)	104
Pine apple (Ananassa sativa) (3027–32)	146
Plastic models and figures (7233–7344)	277
Portraits, ivory (7152–9)	275
Potstone (358–365)	17
Pottery (7000–7065)	272
Precious metals, working in	260
Precious stones	19
Precious stones, table of exports	19
Prepared woods (3734–6)	180
Printing	249
Printing and dyeing, specimens of (5208–57)	227
Pulses	56
RAILWAY plant (4185–7)	190
Rattans and canes (3146)	151
Rattans and canes, table of exports	152
Raw silk	99
Resins (2373–2430)	109
Rice	52
Rock crystal manufactures	269
Rugs (5106–24)	223

NATIONAL ARCHIVES OF INDIA

SAD.

	PAGE
SADDLERY, harness, etc. (5675–84)	237
Sago (1658–65)	72
Saleps (1666–72)	72
Saltpetre (563–582)	27
Saltpetre, table of exports	28
Salt	20
Sandstones (273–291)	14
Sarees (5876–5925)	243
Scarfs for skirts (5926–5947)	245
Sculpture, models, etc.	277
Seeds employed for bracelets, and other ornamental purposes (3741–4)	180
Shark fins, table of exports	77
Shawls, Kashmere (5018–73)	220
Shawls, silk (5077–9)	222
Sheetings (4677–81)	208
Shellac	108
Silk cottons (2926–37)	133
Silk, various specimens of	99
Silk, table of exports	100
Silk embroidery	231
Silk goods	214
Silk goods, table of exports	215
Silks from Bombay and Southern India	216
Silks, plain and fancy (4885–4990)	214
Silk and velvet	214
Silk yarns (4879–84)	214
Silver, articles in	263
Silver embroidery	231
Skins and furs (5621–4)	236
Skins, fur, feathers and hair	235
Skirts, etc. (5958–69)	245
Slate (292–8)	14
Soap and candles (1874–6)	85
Soils, Indian	23
Analysis of a series of	24
Soosees, etc. (5080–92)	222
Spices, etc. (1400–65)	62
Spirits, intoxicating or stimulating drugs (1741–62)	78
Starches, etc. (1633–65)	71
Statuettes, etc., in ivory (7190–7232)	277
Steel, cutlery, and edge tools	259
Substances used as food	45
Sugars (1682–1725)	73
Sugar, table of exports	74
Suttringees (5125–43)	224
Swords, daggers (4337–86)	196

TABLE CLOTHS (4616–4636) 207
Table showing export of Coffee 69

TEN

	PAGE
Table showing export of	
Coir and coir-rope	150
Cotton	123
Cotton goods	205
Dyes	112
Feathers	235
Fish maws	77
Gums	105
Gunny bags and gunnies	142
Hair	236
Hemp and hemp rope	145
Hides and skins	238
Horns	103
Indigo	114
Ivory	251
Jewellery	260
Jute and jute rope	141
Kashmere shawls	219
Lac	109
Linseed	91
Madder (munjeet)	116
Mats and matting	225
Molasses	75
Musk	186
Oils	86
Oils and oil seeds, Bombay	92
Opium	79
Perfumery	185
Precious stones	19
Rattans and canes	152
Rice	51
Saltpetre	28
Shark fins	77
Silk goods	215
Silk	100
Sugar	74
Tea and coffee plantations, Darjeeling	66
Tobacco	83
Wax and wax candles	87
Wool	98
Tables, showing results of experiments on the transverse strength of woods from Mysore (3398–3427)	162
Tanning substances	121
Tapestry, lace and embroidery	228
Tapestry, ornamental	228
Tapioca (1649–56)	72
Tea, collection of, from Assam (1466–1505)	64
Burmah (1616)	68
Cachar (1506–25)	65
Darjeeling (1526–61)	65
Deyrah Dhoon (1562–69)	67
Kangra, Punjaub (1600–15)	68
Kumaon and Gurwhal (1570–99)	67
Tents (4682)	208

WRI

	PAGE
Timber and fancy woods used for construction and ornament, and prepared for dyeing (3149–3736)	152
Tincal	22
Tinctorial gums (2310–29)	106
Tobacco, table of exports	83
Topees (5731–6)	240
Towellings (4656–76)	208
Toys and games (6134–49)	250
Turban pieces (5685–5730)	239
Turnery, plain and lacquered (3753–3842)	181, 182

UMBRELLAS, walking-sticks, etc. (6001–17) 247

VEGETABLE oil series, (1877–2107) 85
Vegetable substances used in manufacture 104
Vertu, articles of 267

WAISTBANDS, etc., (5864–5875) 243
Walking-sticks, umbrellas, etc. (6001–17) 247
Wax and wax candles, table of exports 87
Wood, general manufactures from (3753–4017) 181
Woodcut blocks (6102–6) 249
Woods from—
Assam (3202–18) 155
Burmah (3428–3540) 167
Chittagong (3277–3296) 157
Chota Nagpore (3229–39) 156
Cuttack (3149–62) 152
Darjeeling (3219–28) 155
Jubbulpore (3163–3201) 153
Madras (gun carriage manufactory) (3297–3311) 158
Malacca (3632–72) 177
Malayan Peninsula (3673–3699) 178
Moulmein (3541–3631) 161–175
Mysore 160, 162
Oude (3252–76) 156
Pinang Hill, Forest of (3700–33) 179
Philibheet 156
Rangoon 161
Wood used for making charcoal 3
Wool (2108–64) 97
Wool, table of exports 98
Woollen and worsted fabrics 218
Writing cases and fittings (7066–82) 273
Writing native (6112–31) 250

NATIONAL ARCHIVES OF INDIA

PRINTED BY

SPOTTISWOODE AND CO., NEW-STREET SQUARE, LONDON,

PRINTERS TO H. M. COMMISSIONERS FOR THE INTERNATIONAL EXHIBITION, 1862.

NATIONAL ARCHIVES OF INDIA

NATIONAL ARCHIVES OF INDIA

NATIONAL ARCHIVES OF INDIA

(NSDL)

81020

R016.6064
wat/cla

Watson, J. F.
classified and
descriptive catalogue

NATIONAL ARCHIVES OF INDIA

Digitized with financial assistance from

NSDL
Technology, Trust & Reach

on 16 November, 2018